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ADDRESSES.

PRESIDENT'S ADDRESS.

Delivered before the American Medical Association at the Forty-fourth Annual Meeting, held at Milwaukee, June 6, 1893.

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Gentlemen of the American Medical Association, Ladies and Gentlemen:—In behalf of the officers of this Society, I tender each and every one of you a very cordial welcome.

A cursory view of the circumstances which serve to emphasize the responsibilities attaching to this, our forty-fourth session, will not seem inappropriate.

Some fifty years ago, one of the great political prophets of our country, Henry Clay, son and grandson of Virginia and citizen of America, was crossing the Alleghanies with a friend on his way to his western home. Having reached a lofty elevation they turned for a moment to view the beautiful valley of Virginia—"The gardens of Gul in their bloom." Mr. Clay stood in silence, with the attitude of one inspired. His friend asked the meaning of it. He said, "I am listening to the tramp of the millions who are coming to fill the valleys and the prairies of this western world." The millions have come, and yet other millions are crowding upon their footsteps.

In reviewing the achievements of the past from the position we occupy, in this quadri-centennial year, and in contemplating the present, bright with the promise of future progress, we are filled with admiration for the character of our people and with just pride in the ever advancing prosperity and influence of our country.

There is stirring in our hearts a joyful consciousness that patriotism has a wider, truer, and yet more sacred meaning than at any period of our history.

The rapid development and crowding events of American life expand a year into a decade, a decade into a century; a century has become a thousand years, and the dignity of age is already impressed upon our institutions.

The energy of man has joined hands with nature so that in physical and intellectual development, as well as in extent, this country does indeed constitute one of the grand political divisions of the earth. Is it not the grandest? Does not the White Squadron lead the port column by right as well as by courtesy, as representing the most powerful as well as the most progressive nation in the world?

This amazing result of two hundred years of organized life is more wonderful as being self evolved. The noble ambition of this people has been to demonstrate the power of man to conduct his private affairs unaided and uncontrolled, and to maintain and advance the public interests by a judicious self control and a conscientious regard for representative responsibility.

The latest and most surprising developments, our most gigantic strides, have been made not merely—perhaps not chiefly—through political, but through professional and economic organizations, directed and made efficient by representative bodies. The political economist, better than the doctor, can tell to what extent the responsibility for the next step in the advance of this mighty people has passed from the government itself, to these organizations and their representatives.

Whatever the share of each or all, the members of the American Medical Association, representing 100,000 doctors with all the intelligence, professional cultivation, trained skill and experience, and high personal character which they should possess—dealing with matters affecting the mental and physical energies of this entire generation of Americans and the next—can not but contemplate with gravest concern the important duties, the weighty responsibilities resting upon them.

Gentlemen, we must keep touch and time with all organizations of whatever character that have combined to present to the world the grand picture to which I have alluded. As patriotic citizens, we owe it to our country, as well as to the Association we represent, earnestly to strive to evolve through hard work, thorough observation, and knowledge of the needs and demands of all sections of the country, the things that are necessary not only for the preservation of health, but also for the highest conditions of physical and mental development.

There is no organization in this country so well equipped as ours for the accomplishment of the work we have undertaken. We more thoroughly represent medical opinion than any other body of a kindred character, the delegates composing this Association being drawn principally from other organized medical societies, coming not only from the larger but also from the smaller medical bodies; representing all sections of the country from Maine to Texas, from California to Virginia; when all these are gathered together in our annual sessions, our rolls may fairly be supposed to display the names of the most learned and distinguished of the medical men throughout the land.

You assemble, I do not doubt, filled with enthusiasm and a determination to exercise your best talents in furthering the aims and objects of this Society.

Speaking in the general:—Our prime object is to study the origin of disease; the immediate occasion of its outbreak, with the means of preventing it; and the best means of loosing its malignant hold, if once fastened upon the community or the individual. Secondarily, and yet with a due appreciation not only of its value but of its necessity as a means to

the chief end, we labor to secure for this organization and for all allied with it, the greatest possible efficiency in the performance of the practical work entrusted to us.

The pagan superstition that disease expressed the anger of the gods of Olympus has disappeared from the human mind. The theories entertained and transmitted by the pseudo-science of the Middle Ages are no longer accepted as explaining its presence in our bodies. The Great Physician himself declared that the eighteen upon whom the tower in Siloam fell were not necessarily sinners above all the Galileans; that from congenital blindness in a son we are not to infer, as a matter of course, the wickedness of his parents. While therefore disease does as a Nemesis dog the footsteps of folly and crime—the retributive intervention of the Great First Cause is not a sufficient solution to the problem.

The laws of nature, systematized and arranged upon lines that will meet all demands essential to the preservation and maintenance of the universe, when violated are also sufficient for its destruction. These natural laws of the Creator touch all and several of His creatures. Therefore we look to the material conditions surrounding us, coupled with the proneness of all animated nature to dissolution and decay, for the real cause of death in the human family. While human life has been progressively prolonged during the past century, through a better appreciation and enforcement of hygienic requirements—by legal and police compulsion under the stronger governments, and in those of liberal form by an enlightened public opinion demanding special legislation in regard to the same—there remains much to be accomplished before even relative perfection can be reached. In the United States I believe we are on the threshold of great improvements in this direction. To secure them demands united action. It belongs to us of the medical profession by systematic, thorough and intelligent observation to inform ourselves of the minutiæ essential to a thorough knowledge of the origin of the maladies common to the country, as well as those which are introduced from without. That being done, our united forces must be brought to bear to secure and put in active operation such measures as will effectually stamp out the one group and exclude the other.

In order that every obstacle may be removed and every agency brought to bear that can contribute to success, the medical man must gird himself for a stern battle with ignorance and prejudice, with misdirected intelligence and jealous conceptions of right. Our battle is first with the people and then with their representatives. The average citizen supposes that there is some subtle and selfish design on the part of the physician, especially on the part of associated physicians, to deprive him of some portion of the personal privileges he now enjoys. The American believes that his house is his castle, and even as he worships his household gods, so does he worship magna charta, habeas corpus, trial by jury and representative government. The mental state thus engendered is one of morbid sensitiveness, and develops a temper that blindly strikes at all comers, and not least venomously at the investigator who would inquire into the condition of the premises where disease originates. Inquiry must be pushed in spite of all obstacles. There is no longer a question as to the absolute necessity for properly policing our cities, towns, villages and private houses. Healthful water supply and drainage, the right location of water closets and sinks and their disinfection, with the ventilation of all inhabited buildings, are now admitted to be essential to the maintenance of a high standard of health in every community. No physician is fairly discharging his duty who fails to seek information on all these subjects and to take advantage of the knowledge offered him; and he is criminally negligent if he fails to act upon these fundamental principles when the occasion arises.

Tact, discretion and painstaking instruction are often essential to convince parties interested of the necessity for special legislation in order to protect the health of the general public. Politicians are as a rule timid, apprehensive and eminently conservative where innovations against custom and habit are involved, or where popular objections are likely to be encountered. They can be made to move only through pressure brought to bear by a united public sentiment. It should be our endeavor to educate the masses up to the requirements in this direction. This we can best do by showing them the dangers which daily and hourly surround them from such diseases as are endemic and those that are of an epidemic and contagious nature. Through the politicians, acted upon by and coöperating with an intelligent public sentiment, State and local boards of health must everywhere be established. Their care will be to put in action the great *principle of prevention* now so much better understood. Taking advantage of the operations of boards of health in Germany, and especially in Great Britain, we have without conjoint action accomplished much in certain limited sections of the more densely populated parts of the United States in preventing the outbreak of disease, as well as in curtailing its spread, and absolutely eradicating certain affections which threatened to become widespread and devastating.

Much is to be learned in connection with the endemic diseases of the various sections of our country. The malarious diseases prevalent among us have been extensively studied. Their immediate origin has not been definitely determined, but the conditions of heat, moisture and vegetable decomposition are well understood as most potent in their production. It is a law long since ascertained on the continent of Europe, in Great Britain and in America, that wherever the trend of the land admits of the drainage of collections of fresh or brackish water, these maladies can be brought under control; in fact, can be permanently driven from the country. Yet a complex problem remains for us, viz: how to effect these salutary results in the basin of the Mississippi, with its sluggish streams and torpid bayous, with the marsh lands of the sea coast in general and the vast swamps in the interior. Whilst this is a problem to be solved in the main by sanitary engineers, yet the physicians of the country must come to their aid by contributing their knowledge upon the subject, and inciting the inhabitants of the States to activity in order to provide through legislation the means for carrying out the measures that may be recommended.

Not only in that great valley, but in sections, States and cities more favorably located, a mighty need exists and a great work is to be done.

To recur to the membership and organization of this and its allied associations: We can not too

highly estimate the importance of attaining the greatest degree of excellence possible in the various independent organizations that are here represented. This can be more effectually obtained through the State and local societies that are in active and friendly relations with us. The members of these respective organizations should strive to enlarge their usefulness by bringing into them all reputable physicians who reside within their jurisdiction. This can best be done by demonstrating to outsiders, through the excellence of their work, the importance and practical use of becoming members of the State societies, and leading them to feel that to keep abreast of the times it is necessary to mingle, at least once a year, with the other progressive medical men in the State, for the purpose of interchanging views on current professional topics and discussing and determining such things as pertain to the protection of the health and the general welfare of their *clientele*.

The State societies should strive to induce their members to form societies in every county of their respective States, in all cities of the same, and in all townships, or parts of counties where there is a sufficient number of physicians to justify such organizations. In this way a local and general activity will be engendered, and the average standard of professional intelligence raised to a degree which must result in great good to the residents of each State; and through general discussions of all leading questions pertaining to the health and welfare of each and every locality, measures will be evolved and remedies discovered that will prove of untold advantage to the community at large.

As for the workings of this Association, its organization has improved with each year, and I trust and believe that this advancement will be continuous, until we reach that degree of systematic arrangement which will enable us to accomplish the greatest amount of good attainable in the time allotted to its annual meetings. Improvement in details is necessary for the realization of this result; and I trust that some plan will be devised which will assign more of the special work to the various sections, leaving the Society as a whole to take charge of matters requiring its general supervision and determination. This is a subject to which I desire to call your special attention and to emphasize it, for I am confident that a majority of you will agree that it is of paramount importance. As essential to this purpose, I sincerely hope that you will adopt some plan by which will be checked the growing tendency to read or have read before this body lengthy papers that could be considered and dealt with in a much more effective manner by the separate sections.

One or two subjects need to be specially and separately considered.

CONSTITUTION AND CODE.

The committee to whom was referred the question of revision of the Constitution and By-Laws of this Association will present an entirely new paper, containing many of the valuable features of the old one; leaving out some, however, that in my opinion it was very desirable to retain.

I am glad that our rules require that this report shall lie over for a year before being acted upon. Ample time for the consideration of such an important subject will be secured in this way.

The same committee will ask that the subject of the Code of Ethics be allowed to remain over for another year.

While my own convictions in regard to the Code are of a very positive kind, I feel that, as the subject can not be considered until the report of the committee is received, good taste and good policy both require that I should not discuss it by introducing it in this address.

I have one suggestion to make: I think that a revision of our Code should be referred to the several State medical societies entitled to representation here, and that these societies should report their action to the annual meeting of the American Medical Association. This would give us a fair expression of the opinions of the representative societies from all parts of our country, and every reputable American practitioner of medicine would have an opportunity to vote on this subject. At present, if the annual meeting is held in the West, the East and South have a minority of votes; similarly, if it be held in the East, the West and North; and if held in the South, the East and West are likely to be in number of votes unfairly represented. Equal representation in votes and views for all parts of our common country, free from the domination of States immediately adjacent to the place of our annual meetings, should be obtained in acting upon such an important subject as a revision of the Code of Ethics. It would be well for the State medical societies to obtain and include in the vote of each State, all county and district medical societies entitled to representation here.

Let the medical department of the army, navy and marine hospital service also have a vote in this matter.

The medical societies referred to constitute a very large majority of our members. The "members by invitation," the "permanent members" and "members by application" have, by our Constitution, no vote.

Let a majority of States decide this question, and let us agree to abide by this decision.

MEDICAL EXAMINING BOARDS.

A large number of States have appointed and have in operation "State medical examining and licensing boards," which have contributed greatly to the elevation of the standard of medical education in their respective States and in the country generally. In some instances, in consequence of the existence and action of these boards, colleges have raised their requirements for entrance, and especially for graduation, and now send out men better fitted in many ways for the practice of their profession. I feel confident that before many years have passed, every State in the Union, for its own protection, will have a State examining board. As far as it lies in our power we should foster and encourage these medical examiners who have a difficult, and often thankless task to perform. A conference of delegates from each State board might result in a uniform State law, which is desirable. As it is, at this time some of the State laws regarding the boards are defective.

SECRET AND POISONOUS MEDICINES.

I think this Association owes to the people of this country an earnest effort to stop the sale of secret and poisonous medicines. Free trade in physic is permitted, as far as I can learn, only in this coun-

try, and any quack can advertise in the reading and other columns of our newspapers his so-called patent medicines. Many of these nostrums are known to be poisonous, and of course hurtful. All over continental Europe grocers and druggists are forbidden to sell any pharmaceutical preparations or compounds. This right is restricted to the pharmacist or apothecary; and he is often subjected to rigorous inspection, to very rigid laws, and to heavy penalties for their violation.

If each State would require the vender of any secret remedy to subject his formula to a board appointed by the State for this purpose, said board having the power to grant or refuse a license to sell, this already great and growing evil would be materially lessened or stopped.

SMALL-POX, TYPHOID FEVER, ETC.

The police regulation of small-pox is a matter for the gravest consideration upon the part of the general government and of the several States of the union. Regulations full, comprehensive and complete should be formulated for the prevention of its introduction from without, and its eradication wherever it appears in our land. Notwithstanding the organizations known as "Anti-Vaccination Societies," which so often send out all sorts of misrepresentations, and notwithstanding misstatements from other sources, from the time of Jenner's conclusive demonstration (in 1796) down to the present hour, vaccination has been growing in favor, and now the great majority of the educated classes have become convinceed of its importance. Compulsory laws have been put in force in the larger number of European countries and especially in the German Empire, where not only the army but the people at large are compelled to submit to vaccination at stated intervals—once every third year being the rule for the army.

Our large and constantly augmenting population, their facilities for travel, and their disposition to use their facilities, render it imperative that we should endeavor to obtain, as far as possible from the respective States composing our union, legislation of a uniform character upon this subject. Until this is done, there will be a constantly impending danger of local and even general outbreaks of this universal scourge of the human family. Were it not for the municipal powers that have been granted to our leading cities and exercised by them, this disease would be perpetually with us and our vital statistics would groan under the burden of its polluting ravages.

A study of the causes and conditions which produce typhoid fever, the curse of the mountain and piedmont regions, demands the utmost industry and closest observation on the part of physicians, whenever this disease makes its appearance. The great majority of writers upon this and kindred topics unfortunately reside in cities where the true type of the disease is rarely to be found, and where they are too liable to seize upon conditions which they know to be conducive to disease in general, and assign them as the active fact. Sinks, privies, sewer gas, and polluted drinking water are the specters that flit across the stage to deride and delude these investigators. I can not refrain from expressing the hope that there will arise some eminent man, or more than one, in the rural regions, possessing the intuittion that is akin to genius, who will be able to show with almost mathematical certainty the real circumstances and combinations upon which this malady depends. Be it germ, be it mite, or leucosite, the result remains the same. Individual diseases with their causes are better segregated in the country, and more reliable observations ought to be possible. Jenner and Koch were country doctors.

The contagious diseases—mumps, measles, whooping cough, scarlet fever, and diphtheria, annually carry to the grave thousands of our people, chiefly from the youths and infants, those who are nearest and dearest to us and who appeal most strongly to our tenderest sympathy. These maladies are increasing in a definite ratio to the advance in population, and while modern treatment has done much to alleviate the sufferings of their unfortunate victims, mainly through hygienic measures, still the mortifying fact is patent that their genesis is wrapped in the same obscurity that it was two thousand years ago. The germ, the malignant little parasite, we may have discovered as the source of all these troubles; but why or whence this germ? That defies our knowledge.

QUARANTINE.

One of the most important questions of the hour is that of quarantine. During the past year the apprehensions of the country have been fully aroused upon this subject, and there is every disposition on the part of the people to have such laws enacted as will render us safe against the introduction of Asiatic cholera and typhus fever. The latter has entered one of our principal ports and has infected a limited number of the population of the city of New York. Thanks to the efficiency of the board of health it has been kept under relative control and is now abating. The former, starting from its home in the East some two years since and following the track along which it has heretofore traveled, has not only reached the most frequented ports of Western Europe, but it has traversed the Atlantic, and during the last summer sought admission to our shores. Through a number of fortuitous circumstances rather than by the aid of any well-ordered quarantine, we have been spared the misery of an active invasion. It has retreated to the farther side of the ocean and seems to be preparing with renewed energy and increasing activity for a second attempt to invade us. Shall it succeed? This is the vital question which we are called upon to meet and if possible to solve. The subject is not incapable of solution, but there are difficulties which beset us owing to the character of our institutions and the organic laws under which we live. It has been shown on more than one occasion that the strict enforcement of quarantine laws in America, as well as in Europe, has prevented contagious diseases from entering the seaports of a country, when full and judicious measures were put into execution. During the late war between the States every seaport along the south Atlantic and Gulf States that was effectually blockaded was spared an invasion of yellow fever. Even New Orleans which, prior to that period, had been so frequently visited by it, was kept exempt from it through the measures resorted to for the purpose by the military commandant. Even after one case had escaped the vigilance of the quarantine officer and had taken up its abode in one of the most populous sections of the city, by prompt

removal of it to a vessel in the river, which made a speedy exit from the port, the disease was prevented from obtaining a foothold; while Wilmington, N. C., which until the last year of the war remained comparatively open to vessels plying between that point and the outside world, was subjected to a frightful scourge from yellow fever, owing to its introduction from the Bermudas. Do not these facts warrant the conclusion that yellow fever is of alien origin and never endemic in this country? I offer this to show what can be brought about where a preventive system of quarantine is scrupulously carried out. The circumstances and environment were such at New Orleans as to make it imperative upon the military officers there to keep the disease out of the city, as the army of occupation was, owing to the configuration of the country, necessarily encamped within its limits. It was an army recruited from the more northerly section of the United States and unaccustomed to the oppressive and enervating heat of so warm a climate. Had yellow fever once established itself that army would simply have been annihilated and the chronicler of the leading events of the war would have found adequate figures of comparison only in the plague of London or the Black Hole of Calcutta. These visitations come to us, however, in the majority of instances in times of profound peace, when it is difficult to induce the authorities of the country to enact laws sufficiently stringent to maintain a judicious quarantine. In America, while we enjoy the blessings of a freedom never before equalled, yet the greatest enthusiast will not fail to acknowledge that our form of government has some defects when it is called upon to grapple with questions that require the curtailment of the personal liberty of the citizen for the benefit of the people at large.

There is another drawback to the enactment of general quarantine laws. Our seaport towns as ports of entry are jealous of their local and territorial trade rights. A grand network of railroads spread over our entire country, and the ordinary channels of trade can be interrupted and the trade diverted into new directions whenever free ingress and egress to traffic do not exist at any one of our seaports. Appreciating these facts, and ever jealous in guarding their commercial interests, public sentiment in such communities always tends to suppress the truth at the inception of an epidemic; and even the press, usually free and outspoken on all matters in which the general public is interested, remains practically silent until its utterances cease to be news and a widespread epidemic has advertised itself. This is a matter of profound regret; and yet so long as human nature retains its present characteristics we may always expect such causes to produce corresponding results.

To depend upon municipal quarantine for the protection of this great country from the spread of contagious diseases is to reckon without your protecting host. The selfishness of human nature, the desire for gain, the aggressions and the potency of wealth, will all be brought to bear upon those in authority, and will, if possible, drive from place and power conscientious officers, who in the discharge of their duty fail to comply with their bequests, and interfere in any way with what they consider their rights and privileges. I trust that I shall not be held as animadverting too severely upon this subject. These remarks are not intended for any particular locality. What I have stated is sustained by the history of the past epidemics that have broken out in our country. No one can ever be safe so long as the local authorities at ports of entry are left as the sole protectors of the nation against the entrance and spread of epidemic and contagious diseases. The peculiar organization of our union of States is such as to deter those in official positions from exercising authority in any case except where the right so to do is clear and well defined. The jealous care with which the rights of the States were guarded in the formation of the constitution and the special declaration by amendment to it, that all powers not specifically granted to the general government, were reserved to the States; the provisions defining the rights of the government, and the reserved rights of the States, have been the means of engendering more antagonisms than any other issues that have arisen under it. I need not recur to the stirring scenes that have been enacted in the United States Congress on many eventful occasions. The antagonisms above referred to brought on our great civil contest, with the results which are so painfully fresh in the minds of all. It is not surprising that politicians are averse to agitating any questions which may in any manner trammel the rights of the States through laws passed by the general government. The trend of public sentiment, as shown by the laws enacted by Congress and the decisions of the supreme court of the United States for the last twenty years, manifests very clearly that the public conscience recognizes the fact that a return to old conceptions on this subject is necessary for the general good of the country. While we may admit this to be true, yet in the particular issue we have in hand, may we not fall into a very grave error by failing to perceive what is clearly our duty to the people as a whole? "The general welfare" clause in the constitution clearly gives to Congress the right to legislate for the preservation of the health of the citizens of this country, and for the prevention of the spread of epidemic and contagious diseases among them. There will be many who will cavil at this application of the clause referred to; and the attempt to enact a quarantine law of a rigid and vigorous character will meet with stout and bitter resistance. Reared in the school of strict construction as to the rights of the States, I do not hesitate to declare that the time has at last arrived in this country when, owing to the imperative exigency growing out of our great increase in population, the facilities for travel and inter-communication, and the constant flow of immigration from all parts of Europe, all patriots, representing every shade of political opinion, should unite in demanding of Congress the passage of a law, strong, concise, and yet comprehensive, that will enable the government to properly protect its citizens against disease whenever, in the discretion of its officers, the emergency may have arisen. There is as much reason why the power of the federal government should be invoked to aid in repelling the advent of pestilence, as to aid in repelling the advent of a hostile fleet or army. Once established, pestilence would cost our country more human lives and more money than a war with any foreign power. These remarks are made in consequence of the failure of our late Congress to pass such a bill. The measures which they adopted are partial and temporizing, and

fall far short of the exigencies of the hour. I will not attempt to give you the details of this law, approved the 15th of February, 1893, known as "An Act granting additional quarantine powers and imposing additional duties upon the marine hospital service." Its provisions are no doubt familiar to you all. All of its sections relating to consular regulations abroad are everything that we could wish. But when it comes to be applied on this side of the water, it is grossly defective. All on the other side of the Atlantic is compulsory; all on this side permissive and coöperative. So long as the government officers are only permitted to coöperate with state and municipal quarantine officials, just so long will the law be imperfectly executed. We must not let the matter rest here. This society should endeavor to arouse the people to a correct appreciation of their danger and of their rights and duties in regard to it, and never cease agitating it until Congress shall be forced to enact such laws as are "necessary and proper" for meeting each and every emergency. Personally I am not in favor of a quarantine of detention, but of anticipation and prevention. This is the true way of avoiding the introduction of epidemic diseases into this country. The modern system of quarantine is not a system of exclusion or even of prolonged detention; it is based upon the application of scientific methods and apparatus. I call your special attention to the significant fact that this "system of maritime sanitation" has kept New Orleans free from yellow fever for the last twelve years, and absolutely without interfering with commerce; it has been pronounced by competent observers the most complete system of quarantine in the world; and it should be adopted as a model by the federal government for our common defense, at every point where pestilence may be imported.

NATIONAL BOARD OF HEALTH.

The importance, indeed the necessity of a national board of health organization will be appreciated when it is remembered that the present laws refer almost entirely to quarantine in time of epidemics or threatened epidemics, such laws being carried into effect by the marine hospital service through the treasury department. Every important power in Europe has its chief sanitary bodies independent of the army and navy. In this country according to our form of government there are sanitary duties which can and should be performed only by municipalities, and there are duties, especially in time of epidemics, that can not effectually be performed by cities but should be looked after by the State, and thus in like manner when the States are unable to accomplish what is necessary, then the national government should do it. This is not the case as the law now stands. Two years ago at the meeting of this Association held the city of Washington, a bill was proposed and recommendations were made to the effect that a minister of health be created who should be a cabinet officer. In the recent legislation by Congress this bill though pending, was entirely ignored. At the last meeting of the American Public Health Association, held in the City of Mexico, the committee on national health legislation recommended the appointment of a national health bureau and a commissioner of health, who should be the chief sanitary officer of the United States; said bureau and commissioner (sanitary) to be independent of the medical bureau at Washington. The law that was passed by the recent Congress was a compromise between some of the bills pending in Congress, and owing to the necessities then existing the legislation was hurried, and although in some respects in advance of what had existed before, still to the sanitarians and those interested in the sanitary welfare of the nation, it is far from being satisfactory.

I learn that there will be an organized movement to secure legislation by Congress on the lines indicated, and I would respectfully suggest that a committee be appointed from this Association to coöperate with the committee appointed by the American Public Health Association and committees of other important bodies, interested in securing the legislation needed.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

I am glad to be able to say that during the past year, THE JOURNAL of this Association has shown marked improvement in its management. I am sure that we may confidently look for still further advancement in the near future.

Before closing this address, I beg to return my thanks to my fellow members for the honor they have conferred upon me by calling me to preside over the deliberations of this Association. When I recall the men who before me have filled this chair, and when I see around me those who fill high stations, which their attainments and a just appreciation of the public have given them, I am impressed with my own unworthiness and inability to meet the requirements of this office. For my shortcomings, I beg your indulgence.

In the discussions that are to follow, the papers that are read and the questions proposed, you will agree with me that it becomes us to display no bitterness or partisan spirit, but in debate, however earnest, very carefully to remember that our opponents are entitled to credit for equal honesty of conviction and purpose with ourselves and the same desire to further the interests of this Association. The bigotry and intolerance we sometimes see in theological debates, and the partisan rancor often found in political contests, should have no place in questions that come up for consideration in an Association like this.

Let us strive to show to the world that our whole object is scientific work; and our high purpose—the good of mankind.

ORIGINAL ARTICLES.

ACUTE ULCERATIVE ENDOCARDITIS—A BRIEF RESUME OF THE PATHOLOGY OF EIGHT CASES.

Presented with specimens to the Illinois State Medical Society, May 17, 1893

BY LUDWIG HEKTOEN, M.D.
CHICAGO.

The following eight cases of malignant or acute ulcerative endocarditis, the heart lesion of each of which I have the honor to present to this society, occurred in the Cook County Hospital during the fifteen months ending April 1, 1893.

I wish to extend my thanks to all the members of the staff through whose hands these cases have passed from time to time for their gracious permission to utilize the material in this way; individual

mention of names would embarrass the necessary concentration aimed at in this report.

These cases illustrate well the various forms of acute ulcerative endocarditis from an etiological, clinical, as well as anatomical standpoint and they particularly emphasize the difficulties so frequently encountered in the diagnosis of this affection.

The cases are arranged in the following groups:

I. One instance of primary endocarditis of a normal value.

II. Two instances of acute ulceration developing upon the sclerotic valves without any known infection atrium.

III. Two instances of ulcerative endocarditis with external lesions; in one infection of healthy valves, in the second infection of a sclerotic valve.

IV. Three instances of malignant endocarditis arising during the course of infectious processes elsewhere in the body.

GROUP I.

1. *Primary Malignant Endocarditis of Tricuspid Valves; Pulmonary Infarct; Chills and Intermittent Fever.*—Man, aged twenty-eight, molder; entered the county hospital, April 29, 1892. His family and personal history was negative; he had always enjoyed good health; he was taken ill six weeks before admission with pain in the back, chills and vomiting; since that time there had been almost daily chills followed by sweats. On entrance he was found to be jaundiced, his skin showing numerous scratches. His pulse was 100, respiration 35, temperature 102. Over the lower lobe of the left lung there was dullness, bronchial breathing, crepitant râles; the lungs were otherwise negative on examination. There was nothing unusual noticed about the heart. The liver and spleen were apparently normal. May 2. Crepitant râles over left lung in mammary and infra-mammary regions, while in the axillary regions there were moist râles, broncho-vesicular respiration and some loss of resonance. May 6. Patient is dull and stupid; there are a few moist râles over left lower lobe. May 11. Is getting weaker, has lost weight; the skin is dark and muddy, the sclera yellow; the spleen is palpable. The heart sounds appear normal, there is no increase in the area of dullness. The upper border of the liver reaches the sixth sterno-costal junction and a little below costal arch. The bones and joints are normal. There is pain over the liver. There is constipation. The annexed chart shows the pulse, respiration and temperature as well as the chills that occurred during his sojourn in the hospital. May 13. Exploratory laparotomy, the probable diagnosis being abscess of the liver. No abscess was found. Death.

The post-mortem examination (by Dr. Durr, to whom I am greatly indebted for the specimen) showed the following: the pericardium showed no changes; the heart (Fig. 1) weighed 285 grams; the semilunar valves were competent to the water test. The tricuspid valves show large irregular masses of fibrin upon the auricular surface; these masses vary in thickness, in size and in outline; they are rough and granular; upon the cusp nearest the pulmonary orifice is a large mass, about one cm. in height, projecting into auricle; in the center of the summit of this mass is an irregular opening leading into a cavity formed by the aneurismal bulging or sacculation of the valve out into the auricle. Near this aneurism is a smaller one, two mm. in diameter, without any thrombatic deposits about the margins; many minute perforations and quite marked areas of ulceration can be made out in the endocardium under the thrombotic masses already described. In both pleural cavities were extensive fibrous adhesions. In the lower part of the left upper lobe was a solid, red wedge-shaped area over which there was a fibrinous pleuritis. The other organs showed no gross changes.

GROUP II.

1. *Fibrous Endocarditis of Aortic and Mitral Valves; Acute Ulceration of Aortic Segments.*—Colored man, teamster, forty-eight years old, had syphilis at twenty-eight; passed through an attack of rheumatism in the fall of 1891, but nothing could be learned as to the character and duration of this illness; was admitted into the Cook County Hospital (homœopathic service), February 17, 1892, after a sickness of four weeks with swelling of the lower extremities and the abdomen, scanty urine, anorexia, constipation and insomnia. The examination showed a mitral regurgitant murmur, much ascites, much œdema, and considerable dyspnœa. He died February 27th, 1892, without having had any fever or other symptoms of acute infection while in the hospital.

The post-mortem examination showed œdema, ascites, hydrothorax, compression atelectasis of the right lung, cyanotic atrophy of the liver, chronic gastro-adenitis, passive congestion of the spleen and the following changes in the heart: it weighs 502 grams and appears equally enlarged as to both ventricles; there are no external changes; the endocardium in the right half is negative; the aortic valves are incompetent to the water test; the mitral orifice admits two finger tips: the free margins of this valve are thickened, rounded, stiff, fibrous and the cordac tendineæ are also stiff and thick, but there are no recent vegetations. The aortic valves are much changed (Fig 2); the free margins are thickened and retracted and projecting from the ventricular surfaces near the free edges are long, filamentous, fibrinous masses; in the intercoronary segment is a perforation, about four mm. in diameter, with a crater-shaped mass of fibrin and calcareous granules around the ventricular margins; upon the center of the anterior mitral leaflet is a mass of granular thrombotic deposit corresponding to the point where the margins of the valve aneurism would touch the endocardium during systole. Finally there is a small loss of substance in the endocardium below the attached margin of the perforated aortic cusp. The myocardium showed no other changes except those of hypertrophy and dilatation already referred to. It was not possible to demonstrate any bacteria in the margins of the valvular aneurism.

2. *Chronic Changes in the Aortic Valves; Acute Ulcerative Aortic Endocarditis. Rupture of Acute Aneurism of Membranous Part of Interventicular Septum.*—Man, age thirty, was admitted with history of having been sick for five weeks, but any accurate idea as to the nature of the disease could not be obtained. He was in a chill at the time of admission and auscultation showed a rubbing, systolic murmur over the heart which could be followed into the great vessels; he had a high temperature, rapid pulse and respiration, and appeared moribund from exhaustion. Death after twenty-four hours. The post-mortem ex-

amination showed the following changes in the heart: It was considerably increased in size, weighing 450 grams; the aortic valves were incompetent to the water-test; the free margins of these valves were thick, stiff and retracted; upon their ventricular surfaces were large fibrinous masses adherent to necrotic areas in the endocardium; the thrombotic deposits were most marked upon the intercoronary segment and in the mural endocardium immediately below the attached margin of this valve was an opening surrounded by an irregular fibrinous mass; this opening led into an aneurismal sacculation of the membranous part of the inter-ventricular septum or undefended space which projected into the right auricle between the valves; upon its summit was a perforation whose margins were covered with a huge fibrinous excrescence. In the spleen were three characteristic, medium sized, anæmic infarcts without any evidence of commencing suppurative softening. The other organs in the body were macroscopically normal with the exception of a few pleuritic fibrous adhesions and cloudy swelling in the kidneys and the liver. Micrococci were found in the sections made from the aortic valves and the aneurism of the membranous part of the septum, but no cultivation experiments were made.

GROUP III.

1. *Fibrous Endocarditis of Aortic Valves; Superficial Burn of Right Arm; Acute Aortic Ulceration; Sero-fibrinous Pericarditis.*—Man, aged twenty-four, received a superficial burn of the right arm for which he was admitted to the hospital the next day. The arm was enclosed in a wet boric acid dressing and three days later this was changed to a boric acid and bismuth dusting powder, the burn being nearly healed. On the same day the patient was seized with headaches; he had chills; the temperature went up to 105.2, and there appeared severe pain in the lower part of left chest. The patient was transferred to the medical service of Dr. R. H. Babcock; here physical examination showed the man to be fairly well nourished; dullness on percussion over upper portion of left lung anteriorly; auscultation did not yield any satisfactory result according to the record; the urine had a specific gravity of 1024, contained no albumin and microscopic examination was negative. The pulse, respiration and temperature can be studied from the annexed chart. Death Feb. 11, 1892.

The autopsy showed an anatomically typical acute sero-fibrinous pericarditis; a chronic aortic endocarditis with thickening and retraction of the free margins, valvular insufficiency, and some hypertrophy and dilatation of the left ventricle, the heart weighing 480 grams. Upon the left coronary cusp was a large mass of fibrin and crumbling material covering the ventricular surface, and in the center of this area was a small perforation; the adjacent portion of the intercoronary leaflet showed a similar condition with a smaller perforation; in the myocardium just below the joint attachment of these two valves was a small necrotic area and the intima lining the sinus valvular behind the left coronary cusp presented a gray, soft necrotic appearance. No bacteriological examination was made.

2. *Gangrene of Foot from Frost; Pulmonary Abscess; Acute Ulcerative Endocarditis; Septic Renal Infarct; Streptococci and Staphylococci in the Tissues.*—Man, aged thirty-three, was admitted under Dr. J. B. Murphy's care on Feb. 12, 1893, for frozen left foot; the foot was gangrenous and foul, and on Feb. 15 the foot was amputated in front of ankle joint, the line of demarcation being fairly well developed. The patient at the time appeared to be suffering from sapræmic symptoms and on the 16th there was noted dullness over the upper right lobe in front and also considerable cough. At this time the temperature was 105, the pulse 108, respiration 38 and the record shows the temperature to have remained high with some morning intermissions until death occurred, Feb. 22, the pulse increasing in frequency. The stump did not during life appear otherwise than pursuing an aseptic healing. After death there was found the following:

The stump was free from suppuration and there was no thrombo-phlebitis in its vicinity. In the right upper lobe was found a cavity as large as a hen's egg, filled with thin, yellow, purulent fluid, without any distinct communication with the bronchi, the wall being quite thick, containing soft yellow foci. In the heart, which was otherwise quite normal, the aortic valves showed large thrombotic masses upon the ventricular surfaces, quite firmly attached to necrotic areas in the endocardium. The right kidney contained a wedge-shaped infarct which was in process of purulent disintegration. There was an acute splenic tumor.

Cover glass preparations from the lung abscess, the aortic valves, and the softened infarct showed cocci in large numbers and especially streptococci; inoculation of gelatine and agar tubes produced cultures of staphylococcus aureus and streptococcus. Sections from the valves and from the wall of the pulmonary infarct, stained according to Gram or with Löffler's methylene blue, showed cocci in large numbers, frequently arranged in rows; the sections of the valves, stained by other methods as well, showed the characteristic changes of acute ulcerative endocarditis.

GROUP IV.

1. *Acute Malignant Endocarditis of Mitral Valves Secondary to Lobar Pneumonia.*—A man, forty-five years old, was admitted moribund from a fibrinous pneumonia of the lobes of both lungs. The post-mortem examination showed the lower lobe of the right lung to be in the stage of gray while the lower left lobe was in that of red pneumonic hepatization; there was also a fibrous, retracting endocarditis of the free aortic valve margins with valvular insufficiency, hypertrophy and dilatation of the left ventricle. Upon the auricular surface of the mitral valves were massive deposits of fibrin upon a necrotic endocardium (Fig. 3) and in one place there was a circular perforation of the valve, one cm. in diameter, which was covered with fibrin. There were no evidences of embolism in any of the organs. Unfortunately decomposition had so far advanced at the time of the autopsy that no bacteriological examination was attempted.

2. *Lobar Pneumonia; Right Empyæma; Operation; Acute Ulcerative Endocarditis of Aortic Valve Segment and Adjacent Endocardium.*—Man, porter, age thirty-eight, admitted February 28, 1893, with following history: He drinks beer and whisky every day; he had pleurisy three months ago and malaria several years back. The present illness commenced eight days ago with fever, cough, pain in upper part of

chest but now in lower right side; he can't take a deep breath; has had no chill; the expectoration has been white and yellow. Examination shows a fairly well nourished man; conjunctivæ a little yellow, tongue clean, tremulous; respiration short and catchy; over lung are numerous moist râles and over right lower lobe posteriorly are fine crackling râles. Pulse 108, temperature 102, respiration 32 on admission. On March 8, the temperature had gradually reached the normal figure, pulse was then 68, respiration 28. In two days there is noticed a slight evening temperature elevation; on March 16, the temperature at 8 A. M. was 100, at 8 P. M. 102.6 and it continued at about this range until the 23d when the diagnosis of right empyæma was made and the patient was transferred to the surgical service of Dr. Murphy where a portion of the sixth rib was removed just below the angle of the right scapula, the pleura incised with escape of pus, and drainage tube inserted. The patient's condition at the end of the operation is noted as very poor and on the 25th of March he died.

The autopsy showed two encapsulated pus masses in the upper posterior part of the cavity not reached by the drainage tube; some atelectasis of the right lung; complete fibrous obliteration of the left pleural cavity and a small area of broncho-pneumonia in the lower left lobe; also adhesions between the liver and the diaphragm. In the heart the interconary aortic segment showed upon the ventricular aspect a crumbling, gray, friable mass, one cm. in height, two cm. in diameter with a crater-shaped opening into a valvular aneurismal cavity; the endocardium below the attached margin of the valve was necrotic and crumbling and showed irregular openings leading into spaces in the wall of the ventricle without any perforations into any of the neighboring cavities; upon the auricular surface of the anterior mitral segment was a small thrombotic deposit on a necrotic area in the endocardium which may be connected with the lesions described about the aortic valve; otherwise the heart was normal; it weighed 240 grams. In each kidney was a small anæmic infarct which in the left kidney had commenced to disintegrate. There was an acute splenic tumor and the solid organs showed parenchymatous degeneration. The bacteriological examination showed in the necrotic, mural and valvular endocardium both streptococci and staphylococci and also a bacillus which appeared like the bacterium coli commune.

3. *Acute Leptomengitis; Ulcerative Endocarditis of Aortic Valves.*—A man, thirty years old, was admitted unconscious with the history of becoming suddenly ill the previous day; his pulse was 120, temperature 103, respiration 20; the pupils reacted to light; the retinæ were normal; the stomach was empty; the heart and the lungs could not be satisfactorily examined on account of constant loud breathing. In a few hours the unconsciousness deepened into coma, there were involuntary discharges, and the nurse reported spasms. Death after twenty-four hours. The autopsy showed a double fibrous pleuritis with pleurogenous interstitial changes in the lower right lobe; pulmonary œdema; fibrous perisplenitis and perihepatitis; cloudy swelling and chronic interstitial changes in the kidneys; chronic deforming endaortitis, and the following changes in the brain and in the heart. There was much subdural turbid fluid and the pia-arachnoid was œdematous and in the meshes over the pons and the cerebellum was purulent fluid; all the ventricles contained purulent turbid fluid with a yellow sediment in the dependent parts of these cavities. There were no macroscopic cerebral changes. The cavities in the vicinity of the brain were negative on opening and inspection. The heart (Fig. 4) weighed 320 grams. There are no changes to be noted except those upon the aortic valves the intercornary segment of which presents a circular perforation two cm. in diameter from the aortic aspect; around the ventricular margins is massed a crumbling wall of grayish, granular material, one cm. high, the opening in the summit being seven mm. across. The other aortic leaflets are negative on examination. There were no old changes in the valves. In the center of the ventricular aspect of the anterior mitral segment is an irregular loss of substance, two mm. in diameter, leading into a small cavity, filled with granular material, between the endocardial surfaces of the valve. Cover glass preparations show streptococci in large numbers in the meningeal exudate and in the granular material about the perforation in the aortic valve. No culture experiments were made.

Resumé:—Of these eight cases the instance of tricuspid endocarditis appears to be, as far as observations go, an example of primary or cryptogenetic disease of the healthy tricuspid valves. There are two cases of the not so very infrequent engraftment of an acute ulcerative process upon the sclerotic valves of chronic heart disease without the known presence of any wound, septic process or acute infectious disease. Then there are two cases connected with external lesions through which the infection might have occurred; in one the probable atrium was a superficial burn, but this case was further complicated by a sero-fibrinous pericarditis whose exact relation to the malignant endocarditis can not at this time be established; in the second case it is quite clear that a streptococcus infection took place from a gangrenous foot causing a pulmonary abscess, acute aortic ulceration, and a suppurative anæmic renal infarct.

The three remaining cases are associated with acute diseases elsewhere in the body; one with a double fibrinous pneumonia, one with an acute leptomeningitis, the infection coming from an unknown source; the third case of this kind occurred in a man who died with the diagnosis of empyæma following lobar pneumonia.

All the cases occurred in men belonging to the laboring class, the youngest being twenty-four, the oldest fifty years of age.

There was one instance of tricuspid and one of mitral disease; in the other six cases the aortic valves were primarily involved and in three the mural endocardium showed areas of necrosis and ulceration which, in one instance led to the production of an aneurism of the undefended space and rupture into the right auricle: in one case the aorta was attacked by the extension of the process from one of the valves. It is also of interest to note the spot of vegetation or necrosis in the center of the ventricular surface of the anterior mitral flap where it would come in contact with the vegetating mass or aneurismal bulging of the aortic valves; this spot consequently appears to be due to contact infection and was present in three of the six instances of aortic disease. In three of the aortic cases the valves

were the seat of a chronic endocarditis upon which the acute process implanted itself; in one of these cases the bacteriologic examination failed to reveal any bacteria and it would seem that the inflammatory and necrotic changes in the endocardium had fallen into temporary or permanent quiet suggesting the probability of recovery from the acute symptoms; this corresponds well with the clinical facts in the case which show that the patient died from the effects of an uncompensated valvular lesion rather than from an acute infection (Group I, Case I). In one of these instances of acute, destructive changes developing upon sclerotic valves was a history of previous attack of rheumatic fever obtained to which the chronic endocarditis could be traced.

Otherwise the anatomic and histologic changes presented by these specimens are so typical and characteristic of ulcerative endocarditis as to require little elucidation; they show vegetative and necrotic changes in profusion with the production of typical valvular aneurisms and subsequent rupture. It is quite noticeable that in only four of the cases were there evidences of embolism and infarcts and here the embolic changes were quite limited; as a rule the showers of infected emboli from the endocardial vegetations and ulcerations constitute a striking feature in the clinical as well as the anatomic manifestations of this form of endocarditis.

A number of facts and considerations in regard to the etiology and pathology of acute ulcerative endocarditis may be summarized as follows:

1. The disease is caused by the localization of microbes in the blood upon the endocardium. The streptococcus pyogenes, the micrococcus lanceolatus (pneumococcus), the staphylococcus pyogenes are found most frequently and in the order named. Various other microbes have been found also, such as the pus microbes, the bacterium coli commune, the gonococcus, the bacillus typhosus, as well as bacteria that have not been found in other diseases and are in so far as yet peculiar to malignant endocarditis. Recently the bacillus diphtheriæ was found in the endocardial lesion (Howard, *J. Hopk. Hosp. Bull.*, April, 1893). Experimentally the disease can be produced by first causing some mechanical or chemical injury to the valvular endocardium and subsequently injecting cultures of various bacteria into the blood, or by intravenous injections of cultures of staphylococcus pyogenes aureus on potato suspended in water with scrapings from the potato when the micrococcus agglomerations attach themselves to the endocardium more readily than the single cocci (Rosenbach, Wyssokowitch, Weichselbaum, Prudden, Fränkel and Sänger, Netter, Gerarieu, Ribbert).

2. Acute ulcerative endocarditis is met with as a secondary lesion in the acute infectious diseases, notably and most frequently pneumonia, also in meningitis, acute articular rheumatism the specific fevers, gonorrhœa, dysentery and so on. It is frequently incorporated into suppurative, septic and pyæmic processes. Finally it may occur as a primary or cryptogenetic affection, developing without any known or demonstrable infection atrium. From the mycotic endocardial foci microbes and infected fragments may be carried away by the blood current and give rise to embolism in the various parts of the body, local necroses, and secondary pus accumulations.

3. In over one-half of the cases (three-fourths according to Osler), the acute ulceration is implanted on an old valvular lesion, the absence of endothelium and the roughness presenting assailable points for microbic invasion.* This is the only competent reason for the occurrence of an overwhelming majority of the instances in the left heart but the explanation is not complete, because of the cases affecting primarily healthy valves, over two-thirds occur in the left side and about one-third in the right half.*

EXPLANATION OF PLATE.

FIG. 1. Acute ulcerative endocarditis of tricuspid valve with rupture of valve aneurism through which match has been passed. Group I.

FIG. 2. Acute ulcerative endocarditis engrafted on sclerotic aortic valves; perforated aneurism; necrotic spot in center of anterior mitral flap. Chronic mitral endocarditis. Group II, Case 1.

FIG. 3. Acute ulcerative endocarditis of mitral valves following lobar pneumonia. Group IV, Case 1.

FIG. 4 Acute ulcerative endocarditis of aortic valves; ruptured aneurism; necrotic spot in center of anterior cusp. Group IV, Case 3. Acute leptomeningitis.

THE INFLUENCE OF HIGH ALTITUDES ON THE ARREST OF PULMONARY PHTHISIS.

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A generation ago, in prescribing change of climate for consumption, the usual medical advice was that the patient should take a sea-voyage, should spend a period of time in travel, or should resort to some locality with a mild and equable temperature; little regard being paid to other factors of climate than temperature alone. But with the appearance in 1864 of Dr. Hermann Weber's "Climate of the Swiss Alps," began a change in medical opinion in favor of high altitudes, a rarefied atmosphere being esteemed the most important climatic factor. The latest phase of this changed opinion has been well formulated by James Alex Lindsay, M.A., M.D., in his work on "The Climatic Treatment of Consumption." Says Dr. Lindsay:[1]

"The characteristics of mountain climates which are fairly constant, are as follows: Increased rarefaction, directly proportionate to the elevation; great purity of the air, and freedom from organic contamination; much ozone; free solar radiation; abundance of light, and freedom from fog. The tendency of mountain climates is towards dryness rather than humidity." . . . "There can be no doubt that the most essential of all is the rarefaction of the air, the only important factor common to all the mountain sanatoria of proved efficacy."

Dr. S. E. Solly, author of the article on climate in Hare's System of Therapeutics (H. C. Lea & Co., Philadelphia), arrives at the conclusion that: "In prescribing a particular resort for a given case of consumption" . . . . "the broad truth remains that *of all climatic factors, in the treatment, as well as in the prevention of phthisis, elevation is by far the most powerful of them all.*"

* Out of seventy-eight cases of ulcerative endocarditis of healthy valves, twenty-four were right sided and fifty-four left sided.

NOTE.—In Hamilton Text-Book of Pathology, Vol. I, will be found references to the more important literature on ulcerative or malignant endocarditis.

1 I quote at second hand from a reprint of an essay in The National Magazine, February, 1892: "Can Consumption be Cured?" by A. J. Meuer, M.D.

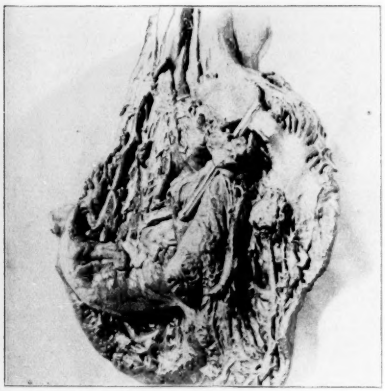

Fig. 1.

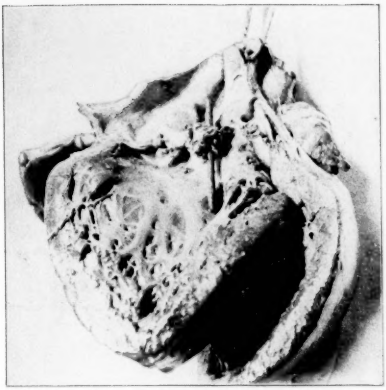

Fig. 2.

Fig. 3.

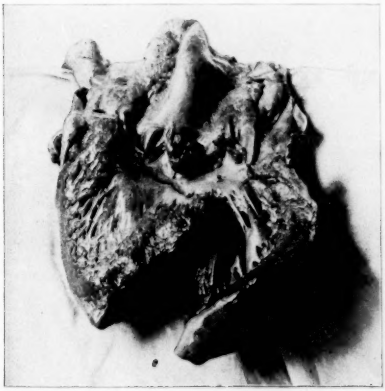

Fig. 4.

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And Dr. C. Theodore Williams, in his essay entitled "Influence of Climate on Health," (v. a Treatise on Hygiene and Public Health, Stevenson and Murphy, editors; P. Blakiston, Son & Co., Philadelphia), after enumerating and recommending different mountain climates for phthisis, summarizes his views as follows: "Though these groups vary considerably in climate as regards temperature and moisture, they all agree in the reduction of the barometric pressure, and this is the essential feature of the whole series."

But no climatologist, probably, has exerted a greater or more widespread influence on the English-speaking medical world, in advocating the claims of high altitudes, than has Charles Denison, A.M., M.D., whose wonderfully able, though rather too condensed little pamphlet: "The Preferable Climate for Consumption," has been reprinted from the "Transactions of the Ninth International Medical Congress," for free general distribution, by order of the legislature of Colorado.

In discussing the comparative importance of different climatic attributes in the arrest of chronic pulmonary disease, while cataloguing five principal, and five confirmative factors of climate, Denison gives first rank to "*dryness* as opposed to moisture." Second, "*coolness* or cold preferable to *warmth or heat*," and third, "*rarefaction* as opposed to *sea level pressure*." And under caption third he says:

"That altitude is not made to precede dryness and coldness may need to be explained, in view of the great prominence given to elevation by Jaccoud in his excellent work on pulmonary phthisis, which, by the way, contains a better appreciation of the benefits of climatic treatment than any other similar book extant. The difference is this: In the present classification *the qualities which altitude produces* (italics mine) are given their due prominence without special reference to their causes, while rarefaction is considered as an individual quality, with special reference to its mechanical effect upon the respiratory function."

It would seem that no other construction can be placed on this language than that in the author's opinion various other climatic factors, in addition to aerial rarefaction, are caused by altitude; and that of the factors so caused, *dryness* and *coolness or cold* are of first and second relative importance respectively. Indeed the author states explicitly in a footnote on page 8: Upon temperature, elevation has a constant effect in the production of cold," and again (p. 4), "Cold is probably the most important factor in the production of dryness, and elevation is not far inferior." But we shall farther on see that the extremest degree of dryness may be found almost at sea level and in connection with a high mean temperature; while it must be evident, to whoever will consider the matter a moment, that the terms *coolness* and *cold* are purely relative and, aside from their implication of an influence on the absolute humidity of the atmosphere, are utterly indefinite in their significance. [2]

And to buttress the chain of reasoning of thinkers whom the medical world delights to honor, statistics may be had in sufficient abundance to demonstrate that actual results observed at high (and dry) altitudes are incomparably better than at low (and humid) altitudes; citing for comparison Austin Flint's 670 cases, with but seven cured and no statement of number benefited, in a compilation of 1,809 cases sent to "*various* low climates," of which number 1,000 had been reported by one other authority.[3]

But while statistics may be marshalled to prove or disprove any debatable proposition, although when collated from a past generation they are too often valueless as bearing on the climato-therapy of the present day, yet a most valuable summary is furnished in juxtaposition with these cases, demonstrating that in the Swiss Alps and at Colorado resorts with an altitude of 4,500 feet and upwards, results have been attained such as have certainly never been reported from the "various low climates" to which the 670 consumptives resorted as instanced by Dr. Flint, or to which the unfortunate 1,000 repaired, as quoted from Dr. C. J. B. Williams.[4]

The fact being admitted then, that about 37 per cent. of the patients sent by several reputable observers to the Swiss Alps and to Colorado have been reported cured, while about 74 per cent. have been benefited, it does not seem remarkable that the view expressed by Dr. Lindsay should have become a widely accepted medical doctrine, viz.: "There can be no doubt that the most essential of all (the characteristics of mountain climates) is the rarefaction of the air, the only (?) important factor common to all the mountain sanatoria of proved efficacy." But having just enumerated six different "characteristics of mountain climates which are fairly constant" and having further stated that "the tendency of mountain climates is towards dryness rather than humidity," this conclusion by Dr. Lindsay of the unimportance of all other factors excepting rarefaction alone, would look to an unprejudiced reader to be hardly so free from doubt as it evidently appears to his mind.

Let it not be forgotten in this connection that so acute an observer and thinker as Dr. Denison, in his catalogue of the comparative importance of different climatic attributes, after asserting as quoted above, that "dryness" and "coolness or cold," (to which he gives first and second rank respectively) are among the qualities which altitude produces, gives only *third* rank in order of prominence to "rarefaction as opposed to sea level pressure." But if Denison be correct in classing "dryness" and "coolness or cold" among the qualities, and indeed, as the very most important qualities which altitude produces, it follows that Dr. Lindsay must be in error when he claims that "the rarefaction of the air (is) the only important factor common to all the mountain sanatoria of proved efficacy."

A logical result of the enthusiastic claims made for a generation past in behalf of the influence of the rarefaction of the air on the arrest of phthisis, was manifest in the line of treatment pursued by a noted and capable clinical lecturer of Louisville, Ky., who, in 1877–78, during my term of service as

[2] Without going out of the way to propound the counter-thesis (as being beside the question) that, the degree of relative dryness being the same, a comfortable degree of coolness is always preferable to uncomfortable heat; and that *warmth* is, in a majority of cases, not only more agreeable but also more conducive to the welfare of feeble and anæmic invalids than is *cold*, it will suffice in this connection to advert to the fortunate fact that there are not a few other factors besides altitude which contribute to the production of agreeable temperatures, among which not the least important is a constant and brisk air movement in summer in some very dry localities, which, from their only moderate altitude and southerly latitude, one might expect to find uncomfortably warm or, indeed, depressingly hot.

[3] Hare's System of Therapeutics, Art. Climate. H. C. Lea & Sons, Philadelphia.

[4] Ibid.

one of the house physicians to the city hospital, put his patients, in the acute progress of pulmonary phthisis, through a series of calisthenic exercises with a view, by deep and forced inspiration and expiration, to obtain the same benefits of expansion of the acutely inflamed and infiltrated lung tissue, which are claimed as due to the rarefaction of the air in the Swiss Alps and in Colorado.

The same influence, no doubt, contributed not a little to the invention and quite widespread use of the pneumatic cabinet and kindred apparatus, which by utilizing the expansile tendency of compressed air brought the mechanical advantages generally claimed for the aerial rarefaction of high altitudes into the inner sanctuary of the doctor's office, thus placing "the only (?) important factor common to all the mountain sanatoria of proved efficacy" within the reach of every patient, without the necessity of leaving home. Judging, however, by the absence for a year or two past of all reference in current medical literature to the pneumatic cabinet, as a factor in the arrest of phthisis, the casual observer would suppose its use has failed to fulfill the hopes of its advocates.

Dr. Denison's claim, as quoted above, that the prime factor, *dryness*, is one of "the qualities which altitude produces," qualified as it is by Dr. Lindsay's assertion that "the tendency of mountain climates is towards dryness rather than humidity," may not, however, be accepted without further qualification. For in "Denison's seasonal chart, showing combined atmospheric humidities for winter, 1883," (op. cit.) Pike's Peak, with an elevation of 14,134 feet, appears as a humid blue oasis in the midst of the lurid red which marks the otherwise dry and arid Rocky Mountain plateau. But this very dry area, designated on the chart by a uniform red color, is so extensive as to demonstrate that whether or not elevation be an important factor in the production of dryness, it certainly is not essential thereto. For, according to the chart, this arid red region includes not merely the noted dry table-lands of Colorado, situated more than a mile and a half nearer to sealevel than is the humid summit of Pike's Peak, but it extends south and west without a break in the uniformity of its tint to nearly the borders of salt water, including Yuma, Arizona, where the altitude is some 13,993 feet lower than the summit of Pike's Peak, and but 141 feet above the sea.

Of course, in calling attention to this fact I must not be understood as claiming that so capable an authority as Dr. Denison has ever advocated the resort to an altitude such as that of Pike's Peak for the arrest of consumption, though he does mention "10,000 feet as a possible extreme in the southern portion (of the United States) in summer." (Op. cit., p. 14.) My purpose, on the contrary, is to show from the authority of a painstaking statistician, who has gone to the prodigious labor of compiling "some eight million separate signal service observations into the Annual and Seasonal Climatic Maps of the United States," (op. cit. p. 2) that, while dryness and altitude may be and often are coincident, the one is by no means a necessary consequence of the other. And that, while "the tendency of mountain climates is towards dryness rather than humidity," at least in those altitudes where the arrest of pulmonary complaints may be hoped for, yet as a matter of fact, the very greatest degree of possible dryness may also be found at altitudes within a few hundred feet of sea level. And not only is this true, but there are elevations also, well within the limits recommended by our advocates of high altitudes, such as those along the seaward slope of coast mountain ranges, which very often have an exceptionally high percentage of humidity by reason of the impact against them of the prevailing humid sea-breezes,[5] and for that very reason, there seems little room for doubt, are specially ill adapted for consumptives as a health resort.

A consideration of this fact seems to have led Dr. A. J. Meuer, while discussing the cognate question of an altitude of immunity from phthisis, to the conclusion, after enumerating the points of superiority in Colorado's climate, that (op. cit. p. 5) "in the mountain region between the eastern slope of the Rockies and the Pacific coast the conditions vary to such an extent that *altitude alone can scarcely be said to enter into the account at all*, unless accompanied by the long list of favorable factors above enumerated. *Accompanied by these conditions, however, altitude is everything!*" (Italics mine.)

It is a fact beyond question or cavil that both in the Swiss Alps and in Colorado, at altitudes ranging from 4,000 to 6,000 feet above sea level, a larger percentage of consumptives is benefited by the climate than is recorded of any of the popular resorts of a generation ago, most of which were characterized by not merely sea level pressure but also by great humidity of the atmosphere. What are the factors of climate which bring about these later so gratifying results? The coincidence that a high altitude, and consequent rarefaction of the air, is common both to the Swiss Alps and to Colorado is so evident that, on first glance, many otherwise cautious observers have jumped to the conclusion that aerial rarefaction is *the* curative influence; or is, at least, *a* curative influence of paramount value. And much labor has been expended in the production of many, not always harmonious, and often unphysiological explanations of how the attenuation and lessened pressure of the air produce the beneficial results that have there been observed.

The Swiss Alps, like Colorado, are mid-continental in their situation. The sea breezes which penetrate so far into the interior have been robbed of their moisture by every chain of hills and every range of mountains over which they blow. The driest atmosphere of all Europe, at least in winter, is doubtless in the Alpine region of Switzerland; although Davos, its most noted health resort, with nearly the same altitude as Denver, hardly more than approximates

[5] Prof. E. A Parkes, in his work on Practical Hygiene, in discussing the climate of India (Vol. II, p. 336. Wm. Wood & Co., N. Y., 1883) says: "The humidity of different parts of India varies extremely; there are climates of extreme humidity—either flat, hot, hot plains, like lower Scinde, where, without rain, the hot air is frequently almost saturated, and may contain ten or eleven grains of vapor in a cubic foot; or mountain ranges like Dodabetta in Madras, 8,640 feet above sea-level, where during the rainy season of the year the air is almost saturated; a copious rain at certain times of the year may make the air excessively moist, as on the Khasyah Hills, where the southwest monsoon parts with its vapors in enormous quantities."

"When the southwest monsoon, loaded with vapor, first strikes on high land as on the Western Ghauts, on the Malabar coast, or on the mountains of Tenasserim, and especially on the mountains of the Khasyah Hills, at some points of which it meets with a still colder air, a deluge of rain falls, as for example, at Cannanore (Malabar) 121 inches; Mahableshwur, 253 inches; Moulmein (Tenasserim) 180 inches; Cherrapoonjee (Khasyah Hills) 600 inches." On the succeeding page the statement occurs that "in inland districts the southwest monsoon having lost most of its water as it passed over the hills, may be comparatively dry."

And Dr. Denison, in a foot note to page 8 (op. cit.) referring to the favorable location of the eastern slope of the Rocky mountains, mentions "the protection of mountain ranges which drain western humid air currents of their moisture."

to that degree of low relative atmospheric humidity which characterizes the Rocky Mountain plateau.

During the winter months while this Alpine valley is clad in a mantle of crisp, dry snow, consumptives from the lower and damper levels resort thither on the advice of the most capable physicians of every nation of Europe. And though advanced or acutely progressing cases of phthisis seldom do well, the most gratifying improvement is often noted in the incipient stages. But with the breaking up of winter and the melting of the snows in spring, there is a hegira from Davos. A uniform consensus of medical authority opposes a prolongation of the invalid's stay into the spring of the year. Why?

If a rarefied atmosphere be the factor of climate which arrests the progress of phthisis at Davos, why must invalids who have made favorable progress during the winter months fly for their lives on the approach of a milder temperature? The altitude is not appreciably diminished by the melting of the snow. The atmospheric pressure remains "fairly constant" in spring, as in winter, at about two and one-half pounds per square inch less than at sea level. The act of respiration continues just as frequent and just as deep as before, and the infiltrated pulmonary tissue, inflamed and sensitive though it be, is no less thoroughly expanded by the deeper and more frequent respirations, and no less permeated by the attenuated air, than when the thermometer was below zero and the snow was crisp and dry.

Dr. Denison's explanation of this noteworthy and most important fact is (op. cit. p. 14) "that we in America have an immense advantage over most European high climates, in that we keep up the curative effect by suitable increase of altitude in summer. Instead, they are compelled, as at Davos, St. Moritz, etc., to give up the chosen climatic treatment during warm weather." And on page 7 the statement is made: "It is to secure the cooler temperature in summer time that some of the phthisical patients from the plains are sent higher up to the parks and divides of the Rocky Mountains." Dr. Denison, be it remembered, ranks "coolness or cold" as the most important attribute of climate next after "dryness."

But when regard for their welfare compels consumptives to abandon Davos by reason of the rise in temperature caused by the approach of spring, were Denison's explanation the correct one they would hardly resort, with the unanimous approval of the best medical advisers, to Badenweiler and Freiberg in the Black Forest, and to other widely esteemed continental resorts where the snow has melted earlier, and where the ground is dry and the air is relatively warm. Then too, there are habitable Alpine heights but little more elevated than Davos, where the summer temperature is cooler far than in the mountain parks of Colorado, and the air is yet more rarefied than at Badenweiler. But these heights are close to the line of perpetual snow and, in summer, to almost perpetual thawing.

In the absence of any systematic meteorological observations continued at Davos throughout the year, whoever will dispassionately consider the facts in the case will, I think, be forced to recognize that, with the melting of the Alpine snows, the erstwhile dry atmosphere of the Swiss Alps must necessarily become relatively charged with moisture.[6]

If, as Dr. Denison teaches—and the doctrine receives my fullest endorsement—if *dryness* be the factor of prime importance in the climatic arrest of phthisis, then the reason why invalids are restored to health at Davos and in Colorado is not because of the altitude and consequent rarefaction of the air, for, as Dr. Meuer well says (op. cit. p. 5), "altitude alone can scarcely be said to enter into the account at all, unless accompanied by the long list of favorable conditions above enumerated"—chief of which is *dryness*. And the reason why consumptives are compelled to abandon Davos on the approach of spring, in spite of the altitude remaining "fairly constant," and notwithstanding they are forced to resort for continued climatic treatment to lower elevations where the temperature is not so cool, is because a damp temperature at high altitudes during the blustery season of the year when raw winds prevail, if of sufficient duration will, in cases of incomplete arrest, almost infallibly occasion a fresh extension of the disease.[7]

There are many elements of uncertainty entering into statistics designed to show the percentage of cases of phthisis actually cured by a given climate. A prolonged period of observation is a condition which may not be eliminated from consideration in such patients as may seem from their general appearance, and even from a careful physical examination, to have fully regained their former health. How long this probationary period must last hardly any two observers are agreed. Many cases too, appear fully recovered only so long as they remain in the more favorable climate; while a return to more humid atmospheres—the only positive test—is very frequently followed by a renewal of the old symptoms of disease. A knowledge of this truth has probably contributed to the paucity of positive statistics. But the fact remains, which may be verified by every traveler, that there are many thousands of former sufferers from pulmonary phthisis contracted in damper climates, who are now living throughout the drier regions shown on Denison's seasonal chart, at altitudes ranging from a few hundred to over 7,000 feet above sea level, and whose ailment is in a state of apparently complete arrest.[8]

If, then, it appears as a logical deduction from established facts that altitude plays no part or, at best, an unessential part in the arrest of the phthisical process; that relative dryness of the atmosphere, and not rarefaction, is the invariable and indispensable climatic factor of all regions of *proved* efficacy, be they elevated or not; there yet remains for consid-

[6] The following extracts from the Encyclopædia Brittanica, Vol. xvi, p. 125, Stoddart, Phila., will illustrate the point: "Thus the maximum humidity occurs from midnight to 4 A. M., or when the daily temperature is at the minimum; and the minimum humidity at 2 P. M., when the temperature is at the maximum, the curve of humidity being thus inverse to that of temperature." Two exceptions are cited to this law, of which one is as follows: "In the climate of Central Asia in winter, the amount of vapor is very small, and *the increase to the relative humidity during the day* is probably occasioned by *the more active evaporation from the snow during the day*." (Italics mine.)

[7] Dr. C. T. Williams, in discussing the influence of atmospheric humidity on phthisis, well expresses the idea when he says (op. cit. p. 190): "The combination of moisture and heat, as is seen in the sirocco wind, is felt oppressive by most people, but it is doubtful if the combination of cold and moisture be not more harmful."

[8] It is a pardonable error for a medical man, whose whole vision is focused upon the Swiss Alps and Colorado, while searching for the most prominent climatic factors common to these elevated resorts, to lay the utmost stress upon rarefaction in accounting for their observed climatic benefits. But it would be also pardonable, in accounting for the climatic benefits observed in the dry Rio Grande valley and contiguous territory of West Texas, and in portions of Arizona within 1,000 feet of sea level—benefits apparently quite equal with those obtained in the somewhat cooler and sometimes drier altitudes of New Mexico and Colorado—should a medicine man of the Zuni Indians, with inadequate information as to meteorological conditions, claim that *rattlesnakes* are "the only important factor common to all" the Rocky Mountain slope, and that to their presence chiefly is due the proved efficacy of all this region.

eration the question whether atmospheric rarefaction be a purely negative factor of climate, simply coincident with dryness in several well known mid-continental mountainous regions; or whether it may not, in advanced and in acutely progressing cases at least, be positively detrimental.

There have been several ingenious, not a few labored, and some positively unphysiological explanations offered by medical writers who have witnessed the beneficial influence of *dry* climates at high altitudes in their effort to account for the *assumed* benefits of a rarefied air and of lessened atmospheric pressure to the square inch. But whoever will read the list of general reasons why a given invalid may not go to an otherwise preferable high climate, as enumerated, with evident solicitude and after ample experience, by Dr. Denison, agreeing substantially with other authorities on the subject, will be apt to conclude that while the average patient who is in condition to travel may tolerate an elevation a mile above sea level it is nevertheless, when viewed with expert judgment, to very many a matter of serious hazard. The possible contra-indications are (op. cit. p. 14): 1. The coldest season of the year, *intensifying the effects of altitude too much* (italics mine) for those coming from warmer climes. 2. Advanced age. 3. A very excitable nervous temperament. 4. Some women, for a like susceptibility, and less adaptability to the change and to out-door life than men. 5. Valvular lesions, with rapid action of the heart. Diseases of the great vessels such as aneurisms. 6. Marked and extensive emphysema, pneumothorax and hydro-pneumo thorax. 7. *Active* pneumonia or *existing* hemoptysis. If the pneumonia or hemorrhage is recent the contra-indication amounts to little; if remote, to nothing. If there is reason for some doubt in any such otherwise favorable case, a gradual rise in elevation should be chosen (!). 8. High bodily temperature whether it be rather constant . . . . or whether it be regularly vacillating . . . . especially with suspicious laryngeal complication, or in so-called "catarrhal phthisis." 9. Extensive involvement of lung tissue in diseased action. 10. The stage of softening, if accompanied by high daily fever, or in one of decided hemorhagic diathesis. "Quick consumption" with or without intestinal ulceration or albuminuria.

After reading such a list of exceptions from an advocate of high altitudes, who justly ranks among the ablest climatologists of his generation, it would seem indeed, a work of supererogation to argue that elevation *may be* highly detrimental. Indeed, accepting the wisdom of the 7th and 8th contra indications quoted, it would appear superfluous to argue that aerial rarefaction must really be regarded a positive obstacle, and not an aid, in the arrest of the active progress of phthisis. My effort, then, shall be the far more moderate task (after briefly presenting a personal experience as an invalid) of maintaining the doctrine that *when the progress of pulmonary phthisis is arrested at a high altitude, this fortunate result is in no degree attributable to, but occurs in spite of the altitude.*

In the summer of 1890, being thirty-four years of age and engaged in active general practice, I suffered several pulmonary hemorrhages. The last, being quite profuse, was followed by fever and the formation of a small cavity in the apex of the right lung. Bacilli were found to be abundantly present in the sputa. In October, a month later, I left my home, Mascoutah, Ill., and went to southwest Texas. During the first six months I remained seldom longer than two weeks in any one locality. During this period I traveled over the greater part of Texas lying west of the ninety-eighth degree of west longitude and south of the thirty-second parallel of latitude, and also over portions of southern New Mexico. East of the Pecos river I had regained my normal weight at the end of three and one-half months, but feeling sensitive to every cloudy day, though the sun is obscured in this region as little as in Colorado.[9] I then went to El Paso for the sake of its still sunnier sky. The air there was ideally dry, and improvement in strength continued with each day. All cough had long since ceased, and expectoration was reduced to a minimum. Early March found me at Marfa, Texas, with an altitude of 4,700 feet. Here, as everywhere in my journeying, were to be found invalids, who, prompted by the benefits received by others, were also seeking a climatic cure. But here one day there was an overcast sky. A gusty March wind was blowing. Prudential considerations kept me within doors all day except for a fifteen minutes stroll, well wrapped up, in the course of the afternoon. Though at lower altitudes and sometimes at a lower temperature, I had, in the course of the preceding five months, repeatedly driven in the open air all day long and without any detriment whatever, I had the misfortune now, though exercising all reasonable precautions, to contract a cold with a tickling cough, due to a recurrence of irritation in the right apex; and during my remaining stay of a week this cough showed no indication of subsiding. Then I returned to El Paso, a thousand feet lower—3,700 feet above the sea. But this locality, which had seemed on my first arrival six weeks previously and which yet seemed, so far as dryness, temperature and sunshine were concerned, to be almost ideal in its winter climate, afforded no relief to the teasing, dry cough. Twelve days of thoughtful solicitude passed, when, after much hesitation, I resolved to return to the considerably less rarefied, if not quite so kiln-dried atmosphere east of the Pecos river and west of the 100th meridian. My train left El Paso in the afternoon, and halted for supper 4,400 feet above sea-level at Sierra Blanca. It is there begins the gentle downward incline towards the Pecos river, which is crossed at Pecos City about midnight. Falling asleep early, though still coughing, I knew nothing more till daybreak. But with the new day the cough was entirely gone.

I have not been able to account for the complete subsidence in one night while traveling down hill at twenty-five miles an hour, of an irritative cough of three weeks duration, on any other hypothesis than that it was due to a diminution of aerial rarefaction—to a restoration of the accustomed atmospheric pressure on a circumscribed acutely congested area of the respiratory tract. Here is the theoretical explanation:

A cupping glass applied to any surface of the body will produce a diminution of superficial air pressure corresponding in degree to the rarefaction of the air remaining within the cup. This diminished air pressure manifests itself by a suction exerted on the surface circumscribed by the rim of the cup. The force of this suction corresponds directly with the

[9] Denison's Climatic Chart, op cit.

diminution of the pressure of the surrounding atmosphere by virtue of the rarefied condition of the air within the cup. When the suction exerted by a cupping glass amounts to two and one-half pounds per square inch, then is manifested over one or two inches of surface the tremendous diminution of atmospheric pressure which, over every square inch of both the cutaneous and respiratory surfaces of the human body, is encountered at an elevation of about 5,000 feet above sea-level.

The phenomena consequent upon the application of a cupping glass to the surface of the body are evident and well marked, but they are limited in area. The same phenomena in kind would be produced over the entire surface, both cutaneous and respiratory, by a corresponding diminution of superficial air pressure on the human body, were it enclosed within an air-tight cabinet, the air being partially exhausted therefrom by means of a pump; and are often actually produced by ascending to a sufficient height in a balloon, or, as is more commonly the case, by rapid transit within a few hours or days from low levels to a higher elevation. The most marked phenomena observable on first glance are:

a. A dilatation and engorgement, sometimes to the point of rupture and consequent hemorrhage, of the capillary system of blood vessels, both on the cutaneous and respiratory surfaces.[10] This diminution of superficial air pressure even though of only moderate degree, will at any point of localized irritation from whatever cause, produce congestion, and if long enough continued would necessarily bring about a transudation of serum into the surrounding tissues. This process may be cut short, if it has not gone too far, by a restoration of the accustomed pressure of the air.

b. Quickened and deeper respiration consequent on the diminution of oxygen per cubic foot of rarefied air, this diminution corresponding directly with the degree of rarefaction.

Man possesses wonderful adaptability to his surroundings. But his endurance of heat and cold, of hunger and thirst, of variations in atmospheric pressure ranging from fifteen and one-half pounds per square inch at sea level to less than ten pounds in the Andes and Himalayas, or less than five pounds in balloon ascents as experienced by Glaisher and Coxwell,[11]—such extremes are endurable only as the individual approximates to a perfect physique and in direct proportion thereto. The fittest alone survive unaccustomed hardships of such character if suddenly imposed and carried to an extreme; the unfit, *i. e.*, physically weak, die.

Fully appreciating how much easier it is to point out the defects of an obviously erroneous theory than to build up another which may successfully withstand criticism, I shall nevertheless venture to formulate two propositions based on the foregoing data: the one explanatory of what I conceive to be the chief detrimental influence of markedly diminished air pressure in cases of unarrested pulmonary phthisis; the other illustrating the antagonism of pronounced atmospheric rarefaction to nature's process of arrest as shown by pathological evidence *post-mortem:*

1. The healthy human body soon adapts itself to high altitudes if not too suddenly reached. But a superficial ulceration, with or without marked infiltration of the adjacent tissues, whether on the mucous surface of the respiratory tract or on the skin, is congested, and its normal tendency to repair is consequently hindered by any considerable diminution of atmospheric pressure. Hence (it must be) those writers who most enthusiastically praise rarefaction as a curative agent (instancing, however, in proof altitudes which are also very dry) nevertheless advise urgently against sending to high altitudes such invalids as are suffering from "*active* pneumonia," "*existing* hemoptysis," or with "high bodily temperature," or "during the stage of softening." Despite the recognized hazard, however, it is astonishing how many doubtful cases do well if only the air be sufficiently dry and the temperature sufficiently mild. As in morals, charity, so in climate, dryness covers a multitude of sins. For the rapid evaporation by a relatively dry air of the serum transuding from the capillary vessels of a superficial congested area, is nature's best antidote to the irritation (affording a safety-valve, so to speak, to the consequent infiltration) which a considerably diminished air pressure causes, more especially when coincident with an approximate saturation of the air with aqueous vapor; and this saturation occurs occasionally even in the driest regions.[12]

2. In his discussion of the mechanical effects of diminished air pressure Dr. Denison says (op. cit. p. 9): "The writer has always maintained and still holds that there is no cause for fear if proper precautions are taken as to extreme elevations and the character and stage of the disease existing in the lungs; *i. e.*, that there should be no spots of softened lung tissue (especially near the root of the lungs), which are insufficiently protected by nature's great conservative process—the deposition of fibrous tissue." A little farther on he adds: "Of course, in very acute conditions we are 'on the other side of the fence,' and it is *rest* which is needed."

It seems hardly necessary to formulate the evident and logical deduction from these statements. If "in very acute conditions it is *rest* which is needed"—and rest is certainly a condition indispensable to the speediest cessation of all inflammatory processes, how can "an increase both in frequency and in the depth of respiration" which "first" occurs "on the arrival of a healthy individual in a high altitude" (op. cit. p. 9), a phenomenon which is yet more marked in invalids with diminished breathing capacity—how can such an increase in respiratory activity fail to be detrimental *per se* in its effects on a case of pulmonary phthisis the progress of which has not been previously arrested? And if "the depo-

[10] J. Mitchell Bruce, in discussing the Therapeutics of Air, (Quain's Dictionary of Medicine, p. 19) says with reference to air which has been mechanically rarefied: "Inspiration of air which has been rarefied by one two-hundred-and-fortieth to one one-hundred-and-twentieth. . . of an atmosphere, immediately causes the phenomena of inspiratory dyspnœa: the thoracic viscera are congested and hemoptysis may result, for the effect may be regarded as that of dry cupping the pulmonary alveoli."

[11] C. Theodore Williams, op. cit. p. 193.

[12] The annual mean relative humidity of Denver, compiled from twenty years observations is quoted in the Ninth Annual Report of the Denver Chamber of Commerce (1892) as 49.5 per cent. of saturation. The warmer months—June to October inclusive—show a lower, and the colder months—November to May inclusive—a higher per cent. of saturation than the remarkably low annual mean. We may find in this fact an additional possible explanation of the contra-indication, previously quoted from Dr. Denison, that a given invalid coming from a warmer clime may not resort to an otherwise preferable high altitude during the coldest season of the year. The personal experience of the writer (though from a colder climate) and Dr. C. T. Williams' opinion previously cited, would go to show that not merely cold and altitude, but these two in conjunction with a high per cent. of humidity, even if of only brief duration, form a combination calculated to be specially injurious to consumptives.

sition of fibrous tissue" be "nature's great conservative process," are we justified in limiting its purpose to the protection "of spots of softened lung tissue?" Its invariable deposition in all cases of either partial or complete arrest of tuberculous pulmonary processes, as shown *post mortem*, can receive no other adequate explanation than that it is nature's means of securing rest to the inflamed tissues—of placing them in splints to limit motion. But an increase in the frequency and in the depth of respiration, which immediately occurs to a much more marked degree than is the case with a healthy individual, on the arrival in a high altitude of an invalid with a relatively reduced breathing capacity, directly antagonizes nature's effort, by the deposition of fibrous tissue, to secure rest by limiting motion.

The very ingenious and logical line of argument advanced by Dr. Denison in favor of *cold* and of *rarefaction*,[13] both of which are produced by elevation, is based chiefly upon his opinion as to the *modus operandi* of dry air, viz.: "In the writer's opinion the chief argument in favor of atmospheric dryness is based upon *the increased transpiration of aqueous vapor from the lungs*, in a degree according with the dryness of the air breathed" (op. cit. p. 3). And since, the percentage of saturation with aqueous vapor (relative humidity) being the same, a given volume of cold air contains a smaller weight of aqueous vapor (*i.e.*, a lower *absolute* humidity) than the same volume of warm air; and since, under the same condition, rarefied air will contain a smaller weight of moisture than an equal volume at sea level, it therefore follows, *the percentage of saturation being the same*, that cool and rarefied air contains less absolute humidity than warmer air at lower levels. And the breathing of such an atmosphere must consequently increase the transpiration of aqueous vapor from the lungs more than is possible at higher temperatures and lower altitudes.

The fact that on Pike's Peak, at least in the winter of 1883, the air was both relatively and absolutely more humid than at Denver (Denison's seasonal chart, op. cit.), despite its greater elevation by some 9,000 feet, and notwithstanding its lower temperature, demonstrates that the "tendency of mountain climates towards dryness rather than humidity" may be overcome by counter-tendencies, the causes for which it is not necessary here to discuss. So that were the premise beyond criticism from which is drawn the conclusion just cited, in favor of high altitudes by reason of the low absolute humidity claimed for them, the deduction would not apply in favor of *all* high altitudes, but only in favor of those elevations where the relative humidity is likewise low.

But the premise quoted, from which so important conclusions are drawn, is offered only as "the writer's opinion." As such it is entitled to the very highest consideration. There is indeed no writer on climate known to me whose unsupported opinion is entitled to more weight. But in the absence of demonstration its correctness may (and should) be questioned, if the conclusions logically deducible therefrom fail to harmonize with facts which are well established.

Let us hazard *per contra* the different opinion, which alone appears to harmonize with all the known facts bearing on the subject, viz.: that the acknowledged influence of a dry air in retarding or arresting the progress of pulmonary phthisis be due *not* to "*the increased transpiration of aqueous vapor from the lungs*," which is but the exaggeration of a vital, physiological function pertaining to normal physiological lung tissue; but that, on the contrary, it be due to the rapid evaporation of serum transuding from the engorged superficial capillaries of certain circumscribed inflamed pulmonary areas, which rapid evaporation promotes nature's tendency toward limiting the infiltration and the extent of inflamed pulmonary tissue. And whether such circumscribed engorgement were, or were not, exaggerated by the reduced air pressure of a high altitude—equivalent on first arrival to the mechanical effects of a cupping glass—its diminution by reason of the absorbent properties of dry air could certainly not be regarded as a vital physiological process affecting chiefly the normal pulmonary tissue, but as *a process due to physical laws only—one affecting pathological tissue alone.*

And, upon such a supposition as a premise, it would follow that "*coolness* or *cold* as opposed to *warmth* or *heat*," and also "*rarefaction* as opposed to *sea level pressure*," would both be eliminated from the list of important climatic attributes, in so far at least as they affect the prime factor, *dryness*; for it is a fact thoroughly well established that the absorbent power of the air bears no definite relation to its *absolute* humidity, in the calculation of which cold and rarefaction are always important factors; but does correspond definitely with its *relative* humidity, taken in connection with the temperature, wind movement and the approximation to sea level. For, *as temperature rises the evaporative power of an atmosphere, whose per cent. of saturation remains the same, increases faster than the rise in the thermometer.*[14] And it is equally true that, *relative humidity and temperature remaining the same, a given volume of air will absorb and retain more moisture at or near sea level than at any higher elevation whatever*, its capacity to absorb moisture diminishing as the altitude increases. Evaporation is also far more rapid during a brisk breeze than in calm weather, so that Parkes has laid down the rational proposition, acted upon by every weather bureau throughout the world, that "the degree of dryness or moisture of an atmosphere should be expressed in terms of relative (and not of absolute) humidity, and should always be taken in connection with the temperature, movement and density of the air, if this latter varies much from sea level."[15]

The important deduction then logically follows that though a particular high altitude resort may have a low relative humidity, yet the low mean temperature and the atmospheric rarefaction may be such as to afford a smaller capacity for the absorption of moisture by a given volume of air than would be the case in some locality nearer to sea level with a relative humidity somewhat greater, but with a mean temperature considerably higher and with a total annual wind movement materially greater.

It is not within the scope of this paper to institute comparisons between particular health resorts at high and low altitudes, or to make extended reference to any other factors of climate than those which are so intimately associated with the growing

[13] W. Steffen of Davos, seems to have argued along the same line; his argument being combated by Dr. Julius Hann (v. Davos, in Buck's Reference Handbook of the Medical Sciences), but I have failed to secure his original discussion of the subject.

[14] E. A. Parkes, op. cit. Vol. II, p. 88.

[15] Op. cit. Vol. II, p. 87.

professional advocacy of high altitudes that they may not be eliminated from consideration. But it may not be out of place after presenting a table summarizing the weather observations at three tolerably widely separated localities of moderate altitude in West Texas to offer a few closing suggestions. Let it be remarked, however, in passing, that while it would appear from the evidence already cited that there is no causative relation whatever between absolute elevation and relative humidity, it can not be doubted that the air is relatively drier on a hill top than in the adjacent valley, or even very frequently on a house top than at the level of the ground. This difference is greater in proportion to the rain or snowfall, and to the impermeability or bad drainage of the soil. And since men occupy habitations located on the soil, and usually at a much lower level than the psychrometers of the Weather Bureau, there is a wide range for selection of a place of dwelling in a given region, and also of regions with no other apparent climatic differences than those pertaining to the rainfall, drainage and porosity of the soil.[16]

Altitude, Mean Temperature, Wind Movement, Precipitation, Cloudiness and Mean Relative Humidity of stations named, from 1877, for 10 years, 6 years and 8 years respectively.

Months.	San Antonio. Elevation 781 feet.					Eagle Pass. Elevation 800 feet.					San Angelo. Elevation 1,900 feet				
	Mean temperature.	Wind movement, miles per month.	Precipitation in inches.	Cloudiness in tenths.	Mean relative humidity	Mean temperature.	Wind movement, miles per month.	Precipitation in inches.	Cloudiness in tenths.	Mean relative humidity	Mean temperature.	Wind movement, miles per month.	Precipitation in inches.	Cloudiness in tenths.	Mean relative humidity
October.	70	4,276	1.99	4.3	69	72	3,717	1.92	3.8	64	65	5,986	2.99	4.4	69
Nov.	58	4,587	2.09	5.0	68	59	3,859	0.60	3.7	64	51	5,698	1.31	3.9	66
Dec.	53	4,832	1.76	4.9	70	53	3,316	1.19	4.6	67	45	6,442	1.47	3.9	65
Jan.	50	4,960	1.58	5.1	72	52	3,427	1.12	4.6	66	42	6,206	1.14	4.0	68
Feb.	56	4,803	2.13	5.4	68	57	4,199	0.97	4.2	61	48	6,385	1.14	4.1	64
March.	63	5,199	2.22	5.3	67	65	4,256	1.80	4.2	63	57	7,231	1.30	3.8	60
Six cool months.	58	28,657	11.77	5.0	69	60	22,774	7.60	4.2	64	51	37,948	9.35	4.0	65
April.	69	5,149	3.38	5.2	65	73	4,922	3.21	3.6	53	63	7,959	2.42	3.3	58
May.	75	4,820	3.31	5.3	70	80	5,518	3.61	4.2	63	73	8,034	4.32	4.2	63
June	81	4,582	2.70	4.5	69	86	5,431	2.13	3.2	59	80	7,253	2.67	3.6	60
July	83	4,172	2.84	4.5	64	87	5,075	3.34	2.8	55	82	6,565	3.47	3.4	58
August	82	3,767	3.65	4.4	67	84	4,025	3.54	3.5	62	80	5,527	3.55	3.7	62
Sept.	77	4,000	4.21	4.4	70	79	3,550	3.54	3.0	64	73	5,607	4.36	4.3	66
Six warmer months	78	26,490	20.09	4.7	67	82	28,521	17.37	3.4	59	75	40,935	20.59	3.7	61
Annual	68	55,147	31.86	4.8	68	71	51,295	24.97	3.8	62	63	78,883	29.94	3.8	63

It is apparent from the foregoing table that of the three localities cited the first two are preferable in winter so far as temperature is concerned; but temperature being equal the drier the air the better. In summer on the other hand, the greater wind movement and lower temperature of the third locality commend it to favor. The writer does not wish to appear as instituting invidious comparisons between health resorts; for the climate of no city or town is comparable with that of the open country. It is living and, if possible, sleeping out of doors in the suitable climate which is of the greatest benefit. It is not "roughing it," nor exposure to inclement weather and to hardships, which indeed must be carefully avoided by the invalid; but living every hour possible in the open air and avoiding so much exercise as to cause fatigue—this it is which enables the climate to arrest the disease and with equal step, build up the patient's strength again. Sleeping on a cot on the open veranda of a country house is specially to be commended. The invalid who has tried it for one summer will know how to appreciate its manifest charms and benefits.

Finally, when every symptom of disease has subsided and the strength is fully restored, it should be thoroughly understood by every patient that his return to a humid climate will, not *possibly* but *probably* rekindle the processes of disease with far more than their former intensity and far less power of resistance on the part of the patient. I am cognizant of too many instances of this kind not to lay special emphasis upon so important a matter. The restored patient if his condition had ever been a grave one must make up his mind philosophically to reside in a dry climate. But he may then if so disposed, remove to a higher altitude, always with an eye single to a dry atmosphere as the *sine qua non*. For it is the writer's opinion, which he contemplates personally acting upon, that when the progress of phthisis has been completely arrested the restored invalid may then with impunity remove to any very dry altitude, provided only the temperature in winter be not disagreeably low, and the air pressure be not so reduced as to excite fresh irritation in an incompletely healed focus of disease.

[16] The acting chief of the Weather Bureau in his letter transmitting the data above given says: "The averages given are for rather short periods and are therefore not to be considered as having a fixed or permanent value." As showing the correctness of this view with reference at least to one of the localities mentioned, I will only cite the report of the chief signal officer for 1885, Part I, p. 181, giving the mean annual relative humidity at Ft. Concho (San Angelo) from Sept. 1872 to Nov. 1879 as being only 54 per cent. while the table shows 63 for a different period. The precipitation for fifteen years and one month at the same place averaged but 19.92 inches annually according to signal service report, 1888, on the rainfall of the Pacific Slope and Western States and Territories.

MENTAL ABERRATIONS.

Read before the Southeast Missouri Medical Association, at Charleston, Mo., May, 1893.

BY L. T. HALL, M.D.
FIRST ASSISTANT, ASYLUM NO. 1, FULTON, MO.

"Man is a harp, whose chords elude the sight,
Each yielding harmony, disposed aright.
The screws reversed (a task which, if He please,
God in a moment executes with ease),
Ten thousand thousand strings at once go loose,
Lost, till He tune them, all their power and use."

Thus sadly sang one of England's purest, sweetest poets, out of the sad experience of a life of alternating light and shadow, harmony and discord, now reveling in the loftiest flights of poetic fancy, the profoundest depths of spiritual experience; now groveling in darkness and despair, driving him to a desperate attempt upon his life, the light of reason finally going out behind a cloud of impenetrable gloom. This comparison of the human mind to a musical instrument, susceptible when attuned aright of the most delightful harmonies, but with "the screws reversed" its "ten thousand thousand strings" giving forth only jarring discord, is as strikingly true as poetical; of which Cowper's own life and experience furnish the most striking illustration. Between the extremes presented in this beautiful figure we find degrees of almost infinite gradation; sometimes but a single chord of the "ten thousand thousand strings" seeming to have lost its tension, the harmony of the instrument remaining unbroken to the most skillful observation until the pressure of some untoward objective circumstance or subjective condition sends forth the discordant vibrations of the string "gone loose."

It is not the purpose of this paper to attempt an inquiry into the etiology, pathology or therapeutics of insanity; but rather to present for your consideration some illustrations of varieties of mental abnormalities, with incidental reference occasionally to supposed causes, treatment and results, which it is hoped may not be devoid of interest to you. Every institution for the care and treatment of the insane will furnish in its population illustrations of those various degrees of mental aberration, from the inmate who camps upon the border line of reason, such as the general practitioner is constantly encountering outside the lunatic asylum, to the raving maniac; from the patient upon the ecstatic heights of maniacal excitement, to the one who sits wrapped in profound silence and melancholy, apparently (and sometimes really) all unconscious of the *non ego*, and even at times lost to *self* consciousness; from the sharpened and quickened intellect that surprises you by its repartee or flight of poetic fancy, to the hopeless and helpless dement who year in and year out prolongs an existence as uninterrupted as the life of the mollusk. But the saddest part of it, as usual, is that we do not see; that represented by the homes that have been desolated, by the heart burnings and heart yearnings occasioned by these separations. Yet even this dark cloud has its silver lining, which is reflected from the lives and homes made happy by the return of loved ones with health and reason restored. (A digression is suggested here which I will insert parenthetically, if for nothing else, to record an earnest protest against a disposition manifested in certain quarters to place eleemosynary institutions of the State of this character on similar footing with its penal institutions, or at best to compare them to "big boarding houses." When statesmen selected, it is presumed, on account of peculiar fitness from long experience in legislative affairs, as well as broad and philanthropic views upon social and economic questions, in their representative capacity of inquirers into the needs of the institutions of the State, and as advisers of the body in whose behalf they act, as to the legislation necessary for their fostering care, can see no higher function for its homes for the mentally afflicted than to suggest the "large boarding house" as the highest standard from which such institutions can appeal to the generosity of the State's benevolence; when it is suggested that an enterprise hitherto regarded as one of the State's noblest charities, which under its broad and liberal patronage, carefully and economically applied, has been within its last biennial period enabled to show a proportion of recoveries to admissions in excess of 45 per cent., should hereafter be esteemed and provided for as "nothing more and nothing less than a large boarding house," the most charitable conclusion is —somebody has blundered. The acceptance of such views would imply not only a halt in the grand forward movement along this line that has marked this as an era of broad and practical philanthropy—a movement in which our State has taken its position in the front rank, but it would indicate a long step backwards towards the darkness out of which we have but just emerged, and would be suggestive of a return of those days and practices that consigned the indigent insane to the poorhouse with its chains and hopeless bondage, discreditable alike to the civilization and humanitarianism of our age.

Pardon this digression. But it has its object. To the medical profession is largely due the advanced position of the present generation upon this subject; and to the medical profession the question may be safely appealed with the assurance that such backward step will *not* be taken.)

To resume the subject: One has said: "The brain is the site of normal mental processes." It may also as truly be said it is the site of abnormal mental processes; with a peculiar susceptibility, as already intimated, to variety and differences in degree in its manifestations of departure from the normal standard possessed by no other organ of the body.

The advantages of asylum surroundings and care for the successful treatment of mental disturbances have been too often and too clearly demonstrated to need reassertion. And yet, with many it is still looked to as the place of last resort, to be sought only when every other resource has been tried and failed.

When there is a more general appreciation of the fact that in the correction of these abnormal mental processes time is as important a factor as in the successful treatment of any other organic trouble, and perhaps even more so, it may be expected that even better results than those already realized will be attained.

To proceed with the presentation of a few individual cases illustrating some of the varieties of alienation, we will pass through the wards and I will introduce in the first place Miss J., æt. twenty years, admitted April 12, 1892, with a family history strongly indicating heredity—the mother and maternal grandmother having been insane. The supposed exciting cause as given in the accompanying history of this case is "hysterical epilepsy, religious excitement and menstrual irregularity." First manifestations two years previous. She was brought to the asylum on a cot, being much reduced by repeated attacks of facial erysipelas which recurred several times after her admission. The physical condition began to improve in three or four months; but even after the restoration of the general health, and the body became quite robust, the mind still continued a blank almost, and for months the lips were dumb. Thus the summer and autumn passed. In the early winter there began to be signs of a mental awakening. With some persistency answers in monosyllables could be had to questions. Then friends were encouraged to write to her, but at first it was with difficulty she could be induced to read the letters, and perhaps questionable whether she was capable; and possibly too, there began to be a painful self consciousness of the crippled condition of the mind. After awhile the countenance began to assume a brighter appearance, and then there was an effort to write, resulting in a letter somewhat as follows: "Dear Father: Where am I? I want to come home;" the entire letter consisting of a page of repetitions. A little later a letter to a brother consisted of several more sentences, in which the delusions that had perhaps characterized the early history of the case begin to creep in. Still later she writes her father, asking many questions about home, in which there is a promiscuous mingling of the real and the unreal. Among others: "Is it true that I gave birth to a colored child before leaving home, or is it a horrid dream?"

Thus painfully groping through months of progress, scarcely perceptible from day to day, this

mind came out of darkness into the light, and is to-day the happy inmate of a home made happy by her restoration and return to it some weeks since. The family and personal history of this case, of course, makes a recurrence probable.

This is Mrs. J., who will meet and entertain you with easy and affable manner, generally bright and cheerful, but now and then with saddened countenance telling you something of her life history, which is a sad one, indeed. She has been an inmate since November, 1891, with a previous asylum history in another State. This is one of those cases in which hereditary predisposition outruns in the offspring the manifestation of the malady in the progenitor; for prior to the mother's mental unbalancing, a daughter aged sixteen, in an insane paroxysm took her own life, while only a few months ago the only remaining child, a daughter aged seventeen, in exactly the same manner, placing the muzzle of a pistol behind the ear, killed herself; the one in the State of Tennessee, the other at the home of a relative in the far northwest. Mrs. J. has some native artistic talent, which finds expression in a small way in decorations about her room, or in emblematic drawings of flowers, etc., to accompany her poems, of which she has written quite a number, many of them full of poetic sentiment very delicately expressed. It is often felt as a matter of regret that the institution is not provided with proper room and material for employment, instruction and development in such lines, which would doubtless often prove an invaluable aid to restoration. But we must pass on.

This is Mrs. B., an inmate since 1887 and prior to that in 1885. This is set down as a recurrent mania; this is the fifth attack, now more properly classified as a case of chronic melancholia. If you will stop for a few moments, Mrs. B. will tell you of the distressingly straightened condition of the institution, its resources exhausted, everything dependent upon her, and she unable to provide, and the inevitable result must be suffering and starvation.

Upon this same ward we meet Miss S., an inmate since 1888, another case of recurrent mania, now properly classified as chronic melancholia—a life likely to be spent within asylum walls. Miss S. has a style of correspondence all her own. Almost every week she hands the physician a letter folded in a particular way and addressed to her father, of which the following is in part a reproduction:

"Dear Father: I write to let you know my condition. I am waiting to come home. I never expect to marry any man but a dry goods merchant. Mr. B. has been the only one in contemplation.

"Such is adapted to my system until my fifteenth year: roast potato, roast mutton, rye bread, wheat biscuit, boiled mutton, cracked wheat, brown sugar, slow tea.

"Such is adapted to my system from my fifteenth until my twenty-fifth year: roast potato, rye bread, roast mutton, sweet cracker, hard boiled egg, cracked wheat, rice, whole peach, tea," and so on by decades or double decades to the one hundredth year, enumerating almost every conceivable article of diet. By way of explanation she goes on to say: "The egg and ham part at the same distance from the palm, that the roast potato begins. The slow egg goes to the outside edge of the arm, is joined to the egg that is with the ham, and is joined to the biscuit by the cracker"—and so on *ad libitum*.

Here we pass Miss W., an inmate since October, 1890, with a previous history of insanity for some years, and a family history of two paternal uncles, and each a son insane. A lady of the highest culture and intelligence, but reserved and as a rule, unapproachable, cold as an iceberg. The idea of persecution is dominant in this case, a very common delusion with the insane.

Mrs. L. here, aged fifty-eight, will always meet you with a smile, and with the lady-like courtesy and hospitality that always characterized her in her own home, will invite you to a seat and entertain you, perhaps, with the most fantastic stories, minute and circumstantial in detail, of how things were done and the social customs that prevailed in the time of King Solomon, of whom she is a daughter. Mrs. L.'s is a case of chronic mania; very violent at the time of her admission four years and more ago, but now entirely harmless and controllable. Since she was brought here, a sister has taken her own life by cutting her throat, the first manifestation to the family of her insanity.

This is Mrs. F., age thirty-five, a daughter of Erin; an inmate since 1886, her second admission. She has so long shown an almost normal mental condition that it is decided she may return home on leave of absence, to be discharged later if thought best. Her husband has been communicated with on the subject, and she is in daily expectation of his arrival, or a letter stating what day to look for him—when, to her chagrin, she receives a letter from him, saying he will come down to see her in the summer and maybe she can go home with him; and, as if to mollify the disappointment, proposes to send her anything in the way of wearing apparel she may want. The little woman is equal to the occasion, and her reply so full of pith and point is well worth preserving. She says:

"My Dear Husband: Goodness gracious, just to think that I have been waiting for your coming for me ever since it has come warmer, and to think that here comes a letter yesterday saying that you would like to come and see me this summer, and you thought I could come home with you if I would. Well, now! I'm paying no attention to that letter, but its looking for you I am, every day to come for me. So you come for me right away and not wait till summer; for when summer comes, why—it will be too hot then to go and live in the hot city, and then you will tell me—'wait to winter, 'till it be colder,' and you will come for me. As you always kept your promise yet to me, well, come for me now and keep the last promise; then you will not have to make one in summer to break in winter about coming to take me home anyway. . . . . I would also like a pair of gloves and a veil too, to be ready to go home with you when you come. And if you only come to see me soon, I will tell you right now, you had better bring your spectacles with yon, lest you can not see me very well. I remain your loving wife." L. F.

Here we meet a typical case of chronic melancholia. Mrs. McC., æt. fifty-three (looks seventy) has been an inmate since 1889, with a previous insane history of four years. She would not change her position in twenty-four hours if not required, and every movement is very much against her will, and under protest. She only eats as food is placed in her mouth, and sits with woe-begone expression, downcast eyes and clasped hands, apparently wholly unconscious of

all that is passing around her. Everybody was much surprised some time since at her hasty flight just as an artist, with his camera, was ready to take the impression of the hall with its inmates; the object being the preparation of some views for exhibit at the world's fair.

Our next case, Mrs. K., recently discharged, furnishes us a very interesting history, with most happy and satisfactory results. Age thirty-seven, admitted Feb. 10, 1893. The accompanying history gives typhoid fever as the supposed predisposing and exciting cause. This is evidently an error; the patient had not had typhoid fever, but the case was doubtless one of cerebral lesion from the first, the presumption being embolism. There was a condition of general paresis. Gait unsteady, head inclined to drop over on chest except when held erect by special effort. Distressing delusions and hallucinations kept the patient in a constant state of alarm and excitement, rendering it necessary for some days and nights to keep her in a lock-bed. In her imagination her home had been desolated, her father and children meeting horrible deaths, while she had shamefully abandoned her husband, and gone with a less handsome man. In addition to this, reptiles were constantly crawling about her, and at any moment her handkerchief was transformed into a serpent. Both in the general paretic condition and in the character of the delusions this case bears a striking resemblance to one of chronic alcoholism. The bowels were found loaded and the accumulated fæces dislodged with difficulty; the patient then put upon iodide potassium, in increasing doses. At the expiration of two weeks the first indications of improvement of a decided character were manifest, and after some days suddenly the cloud rolled away in a single night. Mrs. K. was comparatively well. She was detained a few weeks longer then discharged, and returned home March 28th, whence an occasional letter indicates the completeness of the recovery, and presents the picture of a grateful and happy family.

These are but a few cases, selected at random from the many, to illustrate some of the features of asylum life. With many there is nothing for the physician to do but to exercise a careful oversight of the general health, for even more than ordinary vigilance is required here, else he will be surprised by the invasion of some fatal disease. He must remember he has a household of helpless and irresponsible beings, in many respects like children; many of them incapable of telling their ailments; some inclined to exaggerate every little indisposition, and in the absence of such to manufacture for the occasion; while others, with the anæsthesia so common with the insane, are actually insensible to pain.

On the other hand, there is the inspiration to earnest study and effort found in the curability of many cases; and he is often rewarded in being the instrument of restoring broken households, and removing the saddest affliction that falls to the lot of man.

IN order to encourage graduates of literary and scientific schools to undertake the study of medicine the Chicago College of Physicians and Surgeons offers ten scholarships, each of which is valued at $100 a year for three years, to such applicants as present evidence of the best qualifications for medical study.

SOCIETY PROCEEDINGS.

Medical Society of the State of Pennsylvania.

Forty-third annual meeting was held at Williamsport, May 16, 1893.

President Dr. Henry L. Orth of Harrisburg, called the meeting to order at 10 A. M. Addresses of welcome were made by Mayor Elliott of the city, and Dr. H. G. McCormick, chairman of arrangements.

About 230 delegates and members registered.

The publication committee reported the issue of over 2,000 copies of the annual volume of Transactions in 1892 at a minimum cost. These were distributed to the members of the county societies, medical journals, other State societies, etc.

The committee on contagious ophthalmia reported progress showing the great need of action on this dangerous disease among children.

An amendment to the Constitution was adopted providing for a committee on scientific business to aid the committee of arrangements in providing papers and discussions for the meetings.

At the afternoon session Dr. W. S. Latta of Philadelphia, read the

ADDRESS ON MEDICINE.

He felt that it was an error in practice for a physician to announce himself as a specialist until he had practiced general medicine for at least ten years. Otherwise, he becomes one-sided. Again, the physician needs a knowledge of drugs, their uses and modes of administration. He would do well to dispense his own drugs. He must not be ignorant of hygienic matters, the causes of disease, etc. Must know what may be wrong with the plumbing, the mode of disposing of the garbage, water supplies, contagion, disinfection, all must be at his command. He is to prevent as well as cure disease.

While many of the members subscribed to these views, there was a decided difference of opinion as to dispensing drugs. The city practitioners mainly oppose it, though some preferred this plan, and the country doctors advocated it. Dr. Latta thought that forty drugs well selected would answer every emergency.

Dr. Edward Jackson of Philadelphia, read a paper on

THE IMPORTANCE OF EARLY DIAGNOSIS OF CATARACT,

and described the difference in surgical maturity and visual maturity. In the former the opacity is greater but it comes later. When the lens is firm it is easier of removal. However, if the other eye is going the operation becomes compulsory. When there is considerable vision, the patient has a power which cataract glasses can not give.

Dr. G. B. Massey of Philadelphia, read a paper entitled

PREVALENT ERRORS IN THE TREATMENT OF THE DISEASES OF WOMEN.

Among the erroneous views and practices of the gynecological specialists is the unquestioning acceptance of the new gospel that the pelvis of woman, unlike all other portions of human beings, is the exclusive domain of the surgeon. This error becomes practically apparent in the readiness with which speculæ are employed with virgins; in the use of tenaculæ and sounds unnecessarily; and in harsh bimanual examinations. When a diagnosis of "displacement" has been made it is an error to correct the displacement by placing within the vagina a skeletal structure never contemplated by nature. The displacement has been caused by some other condition, and no true cure can result until that condition is first remedied. The causal

condition is usually an enlarged uterus from catarrhal or other inflammatory process, and is capable of being corrected. The use of artificial support within the vagina should be reserved for incurable cases.

When a diagnosis of dysmenorrhœa, or as I prefer to call it, menorrhalgia, has been made, it is an error to assume that the proper treatment is to dilate the cervix, for the theory of obstruction on which it is founded has no basis in fact. Since no accumulation has been found by careful observers, and so large an instrument as a dilator itself can be inserted within the canal, it is against reason that the proper course is to stretch the uterine canal until an audible snap is heard. The galvanic current is a better remedy.

My best reason for believing that repairing an old laceration will not relieve the suffering of certain cases is the evidence daily encountered that it has not done so. The real lesion was a chronic metritis, and unless this is cured the operation is unavailing. When the metritis is cured the patient will not then care for the operation. As to the dangers alleged to exist in the scar tissue, it may be said that carcinoma is possible in irritative conditions, but healed scar tissue, whether consequent on the tear or the operation for its repair, is as harmless here as elsewhere in the body.

But all these questions are usually consigned to the limbo of "tinkering" by certain surgeons practicing as gynecologists who invariably and honestly find ovarian disease present in every case examined. Their first mistake is often in arriving at this diagnosis, since they mistake a tender uterus for a tender ovary. Having made the mistake of attributing the patient's suffering wholly or mainly to the uterine appendages rather than the uterus, the associated mistake follows of removing by abdominal section the slightly inflamed organs while leaving the more important seat of the disease as a source of continued misery. This particular procedure has become so fascinating to the rising generation of operators that our gynecological dispensaries and hospitals have become shambles, where women by the score are persuaded to undergo an operation that is unwarranted by sound judgment.

The error of a merely surgical ambition leads also to unnecessary operations for the removal of fibroid tumors that are amenable to electrical treatment. In spite of the adoption of the Apostoli method by Keith, the followers of his former surgical methods boldly cite his older views in support of bloody operations that are only warranted by the vaulting ambition of the operator. When distrustful of its propriety in a given case the alleged gynecologist still stands by his guns, and removes the ovaries in hopes of affecting the growth of the tumor.

An error of certain specialists dwelt upon finally in the paper was their expectation of the best results in electrical treatment without special knowledge and skill on the part of the operator; and the assumption of still others that electricity is a cure-all in gynecology.

Erroneous views of gynecology among general practitioners are of much the same nature as among specialists. As a consequence, their choice of consultants is often at fault, and they refer cases to surgeons that might be relieved by themselves in case they possess an acquaintance with the uses of electricity and allied remedies in these affections, or that are best referred to one who is still mindful of the relationships that subsist between gynecology and neurology.

Dr. E. E. Montgomery of Philadelphia, in discussion—had failed to see electricity reduce the size of a fibroid. It only had a temporary effect on such growths. Patients are rarely able to continue the treatment for years. But an operation gives relief without delay. Surgery gives excellent results in a great number of cases.

Dr. H. A. Hare of Philadelphia, thought if electricity gave such decidedly good results in these cases why does it not act with equal results in other tumors, as of the nose, throat, etc.? Electricity is not equal to many drugs upon which all rely.

Dr. T. J. Mays of Philadelphia, read a paper on

REST IN THE TREATMENT OF PULMONARY CONSUMPTION.

It is a wasting of the whole body, the strength is easily dissipated. Energy is not distributed. Patient is spending his capital. Remedy is to stop this and build up the physiological capital. Requires air, food and rest. Exercise as too often urged in the open air exhausts the patient. In many cases he had seen marked improvement which was immediately lost by the resumption too early of activity.

Dr. H. G. McCormick of Williamsport, chairman of the legislative committee, reported the success of the bill for a board of medical examiners. It was not what had been asked for, but it was a great advance in medical education to obtain this. After July, 1894, no one could enter the practice of medicine in Pennsylvania unless he had attended three full courses of lectures in a medical college of at least five months in length, had a diploma and passed an examination before the board. After July, 1895, he must have attended four full courses, etc. This law is better than that of any State in the union. Dr. McCormick gave a history of the efforts during the last nine years to this end.

The report gave much satisfaction to the members, and a vote of thanks was tendered those who had worked on this committee, to the physicians, members of the legislature who had aided in the work and to certain legislators. (The governor has since signed the bill and it will soon be in operation.)

Dr. W. M. Weidman reported additional monies obtained by his committee on the Rush monument fund.

A resolution was passed urging for more hospitals for the care of the insane.

On Wednesday, delegates were received from the New Jersey State Medical Society and the Pennsylvania Pharmaceutical Society.

Dr. J. W. Park of Harrisburg, read the

ADDRESS IN LARYNGOLOGY.

He insisted on the importance of voice training, begun early, especially in the public schools. Children should be taught to articulate correctly from the moment when they commence to talk. Breathing exercise is needed by all public speakers. The want of proper training is the cause of so much throat trouble with preachers and others who talk long at a time. Many fail because they do not get the proper pitch.

Dr. J. V. Shoemaker of Philadelphia, described and exhibited a number of new remedies for external application in skin diseases.

Dr. J. M. Baldy of Philadelphia, read a paper on

CARCINOMA OF THE UTERUS.

He urged the importance of making an early diagnosis, and then by an operation removing the disease while yet local. After the cachexia is shown there is no hope of cure. The symptoms are subtle, and rarely is the grave nature of the disease suspected though it is progressing. There is little pain, appearance of health, and often the only symptom is a slight uneasiness, a backache, etc.

Dr. C. R. Earley of Ridgway, insisted that the disease always was constitutional. Remove the tumor but the disease remains. Must treat the system. His remedy was arsenic and hemlock. He detailed cases where the best sur-

geons had diagnosed carcinoma and where it had been removed without an operation.

Dr. Jas. Tyson of Philadelphia, agreed that the difficulty as to diagnosis between carcinoma and adenoma caused delay, and it could only be made by the clinical condition.

Dr. G. G. Davis of Philadelphia, believed we may remove the disease by instituting constitutional measures.

Dr. Baldy in reply, said he regarded it as local at first. He had seen cases permanently cured after an operation, and the health completely restored.

Dr. S. Ayres of Pittsburg, gave an interesting account of cases of movable kidney. Nervous symptoms resulted, digestion was disturbed, pain resulted from twist or extension of the ureter, there is inability to sleep on the other side, etc. The cause may be congenital, falls, strains, etc. The prognosis is unfavorable. Supports fail. Cases have been benefited by surgery, as stitching the kidney to the abdominal walls. Dr. Hare mentioned a case where great pain was caused by the twisting of the ureter, simulating nephritic colic.

Dr. G. D. Nutt of Williamsport, reported the results in intubation, and detailed cases. The operation is often too late, hence the great mortality. While the tube aids the breathing, treatment is necessary, the inhalation of steam from slacking lime, etc., also the fumes of burned calomel. Rectal injections aid to keep up the strength.

On motion of Dr. Bishop of Harrisburg, a preamble and resolution were adopted asking the legislature to pass an act now before them to prevent the pollution of streams which are used for domestic water supplies, especially in view of the probability of cholera being introduced into the country.

(Unfortunately this legislation utterly failed.)

In the afternoon Dr. S. W. Dixon of Philadelphia, read the

ADDRESS IN HYGIENE.

Cleanliness in everything was demanded. The air is full of minute life. Build up the tissues and thus enable the system to resist the seeds of disease. The deadly water gas pervades the atmosphere. Parks are needed as lungs for the cities. Wide boulevards, vegetation should be encouraged, school houses need ventilation, the profession should always teach the advantages of hygienic surroundings.

Congratulatory telegrams were exchanged with the State Medical Societies of Illinois and Iowa.

The committee on nominations reported the following officers for 1894:

President, H. G. McCormick of Williamsport; treasurer, G. B. Dunmire of Philadelphia; secretary, Wm. B. Atkinson of Philadelphia.

Next place of meeting, Gettysburg.

Delegates to the American Medical Association and the State societies and censors for each district were elected.

Dr. M. Price of Philadelphia, read a paper on extra uterine pregnancy with a living mother and child at full term.

Dr. Jas. Tyson of Philadelphia, read a paper entitled: Heart Disease or Kidney Disease? showing how in several instances the symptoms were such as to indicate the presence of one but the results proved it to be the other, and *vice versa*.

Dr. John B. Roberts of Philadelphia, spoke on simplicity in the treatment of fractures. He regarded simple dressings, often without any form of splint, as less liable to displacement, easy of application, more readily changed; in short doing all the work without any cumbersome apparatus as was formerly employed. He discarded the primary bandage as useless, and illustrated his remarks in a very interesting manner.

Dr. H. A. Wilson spoke on suture of the tendo Achillis in deformities of the feet.

Dr. W. C. Hollopeter of Philadelphia, read a paper on

SCARLET FEVER AND ITS TREATMENT.

He believed great progress has been made in the prevention of the sequelæ and the spread of this disease. Rigid bathing, inunction till desquamation has entirely ceased. Daily sponging with carbolated water or sublimate solution; but in many instances the caretakers fail to do it properly, so that it fails of its object.

Dr. Hare endorsed fully the carbolic inunction; the temperature falls under its use. Mild alkaline diuretics, spirits of niter, acetate of potassa. Acetanilid is dangerous and needs care in its use. Sponging is excellent.

Dr. Tyson liked digitalis; in small doses it prevents nephritis. He had ceased the use of the coal tar derivatives.

Dr. I. N. Kerlin of Elwyn, reported on new hospital for the feeble-minded in the western portion of the State. $250,000 had been appropriated by the legislature for the building, and in all probability an additional amount would be forthcoming as it may be needed.

Dr. J. B. Murdoch of Pittsburg, offered a resolution to oppose any change in the Code of Ethics of the American Medical Association, and after remarks from several members strongly favoring the resolution it was unanimously adopted, with instructions to the delegates of this society to oppose any changes.

THURSDAY.

Dr. W. Murray Weidman of Reading, read the

ADDRESS IN SURGERY,

taking the subject of railroad accidents. The treatment is the same as for such injuries by other causes, but the surrounding circumstances are vastly different. No nurses, no hot water, dirt everywhere, the assistants are grimy and filthy, there is no time to prepare. In many towns there are small hospitals which are an excellent aid in such cases. He alluded to hemorrhage as the most important trouble, and often the fear of this causes more injury by the efforts of the comrades to stop it even when slight. The tourniquet is applied so as to cut off the circulation when the amount of bleeding would have been trifling. He objected to delay in amputation, waiting to recover from shock when the operation had better be performed without delay. It increased the danger. He exhibited his emergency bag, always at hand loaded with what was needed, no time being lost in collecting the articles.

The address was so replete with valuable information, that a vote of thanks was tendered the speaker.

Dr. J. M. Batten of Pittsburg, spoke on Bright's disease.

Dr. Chas. K. Mills of Philadelphia, on insanity and quasi-insanity in children. It was an imperfect paranoia, but mania was the more frequent form. Such cases were less easily cured than adults.

Dr. John Curwen and Dr. I. N. Kerlin of Elwyn, agreed with Dr. Mills and mentioned cases of dementia which were regarded as imbecility, etc.

In the afternoon Dr. John Curwen read the

ADDRESS IN MENTAL DISORDERS.

He regarded first the bodily condition, next the influence of the emotions, passions, affections. There were two general conditions, exaltation and depression. Cases can only be treated individually. We can not formulate a course of treatment. The medicine and doses in each case vary. In excitement the primary indication is free purgation, calomel fo'lowed by Dover's powder. The sedative is afterwards decided by the susceptibility. Opium is objectionable. Atonic is far preferable. The pyrophosphate of iron with

gentian acts as a sedative. An occasional narcotic may be demanded. Amyl or paraldehyde are good. Bromide of potassium is objectionable, as it produces loss of appetite and depression often followed by excitement and violence. Here the only thing is to place the patient in his room and watch him. Milder cases may take exercise in the open air till the excitement disappears. Rye whisky is good as a sedative in many cases; use it till all excitement has been relieved, then withdraw it. He did not believe in the need of gradual withdrawal of whisky or such articles. He had never experienced any ill effects from the abrupt stoppage. Substitute a tonic and food. Never use large doses of whisky, and observe care with stimulants; say half an ounce to an ounce three times a day. These are rarely other than the asthenic type. The great need is sleep, to recreate, but narcotics, etc., do harm by interfering with digestion and assimilation. Divert the mind from all causes, emotions, etc., especially in cases of melancholy; inspire hope and faith.

Dr. T. D. Dunn of West Chester, read the

ADDRESS IN OBSTETRICS.

He alluded to anæsthetics in labor and the right to employ them, not only in operative procedure but in ordinary labor. Profound anæsthesia is rarely required. Relieve the excitement and thus prevent after trouble. Symphyseotomy was reviewed and regarded as the proper method in cases where the diameters only needed a slight increase. Antiseptics were highly commended, not to be employed, as in some cases, to excess. In conclusion, he offered resolutions that in the opinion of the State Medical Society of Pennsylvania it was the duty of private practitioners to employ the same antiseptic precautions in private practice as in hospital work. These were adopted without debate.

Several papers were read by title, the authors not being present.

Dr. F. E. Stewart of Watkins, N. Y., was received as a representative of the New York State Medical Association.

The president appointed as the committee on scientific business, Drs. C. W. Dalles of Philadelphia, S. R. Gorgas of Harrisburg, etc., to aid in the work of 1894.

The president-elect then declared the society adjourned to meet at Gettysburg, May 15, 1894.

American Surgical Association.

Buffalo, N. Y., May 30, to June 1, 1893.

The annual meeting of the Association was called to order in the Alumni Hall of the medical department of the University of Buffalo, by the president, Dr. Nicholas Senn of Chicago.

Dr. M. D. Mann of Buffalo, delivered the address of welcome.

The president's address was next delivered by Dr. N. Senn.

A NEW METHOD OF DIRECT FIXATION OF FRAGMENTS IN COMPOUND AND UNUNITED FRACTURES.

The speaker said that while the adoption of rigid antiseptic precautions has reduced the mortality in the treatment of compound fracture from 50 to 70 per cent. to almost nothing, yet the mechanical treatment of compound and ununited fracture has undergone little improvement during the last decade. The principal object of the address was to make an earnest plea in favor of more frequent recourse to direct means of fixation in the treatment of compound and ununited fracture. The time is at hand when compound fracture should be treated upon the same principle as wound of the soft parts, viz: the bringing into apposition and holding in contact by direct mechanalic measures, the different anatomical constituents of the wound until the process of repair is completed. In oblique fractures of the femur, it is generally conceded that continued extension and external fixation do not succeed in preventing more or less shortening and angular deformity. Long continued extension is followed by temporary and often by permanent injury to the adjacent joints. Overriding of the fragments is often productive of harmful pressure upon important vessels and nerves. Displacement of the fragments and imperfect mobilization are the most important factors in the production of exuberant callus which so often impairs the functional result. The displacement of detached fragments in comminuted compound fracture is often not recognized and much less frequently connected without direct intervention, and thorough disinfection is frequently out of the question without enlarging the external wound and free exposure of the fracture. Long confinement to bed is detrimental to the general health and often the indirect cause of many fatal intercurrent affections. These evils attending treatment of compound fracture can be avoided in a measure by direct fixation of the fragments. This enables the surgeon to bring the fragments into accurate apportion and secure permanent retention, and it also enables him to disinfect every part of the wound and to arrest hemorrhage.

The history of direct immobilization of fragments was then reviewed. The different methods of suturing were then considered. The use of ivory cylinders and clamps was described.

The absorption of aseptive ivory and bone in the living tissues was then taken up. Investigation has shown that there is a limit to the absorption of aseptic absorbable bodies. The introduction of large and solid foreign substances overtaxes the absorption capacity of the tissues and either removal by operative treatment becomes necessary, or spontaneous elimination is sure to take place sooner or later. To overcome this objection the author recommended as absorbable, intra-osseous splints, hollow, perforated cylinders of bone. The use of such cylinders does not interfere with the early formation of the intermediate callus from the medullary tissue. Such cylinders should be made of the shaft of the long bones of young animals such as chickens, turkeys or rabbits. Experiments and observation prove that bone or ivory used in the direct fixation of a fracture can be safely left in the tissues with the expectation that the material will become encysted and remain harmless and that in the course of time it will be removed by absorption. Bone is absorbed more readily and in a shorter time than ivory. A hollow cylinder of bone inserted into the medullary cavity of a bone is removed completely by absorption in a comparatively short time. The same fate awaits a thin ring of bone embracing and holding in mutual uninterrupted contact two or more fragments in the treatment of compound and ununited fractures by direct fixation.

The most efficient way to prevent lateral and longitudinal displacement in oblique fractures of the shafts of the long bones is to bring the fractured surfaces in accurate contact and hold them in this position by an efficient absorbable circular support. The use of silver wire and other inabsorbable material for this purpose is objectionable. Catgut and other absorbable ligatures are not sufficiently durable. It had occurred to the author that such fracture could be retained almost to perfection after reduction by engaging the ends of the fragments in a ferrule or ring of bone or ivory. This will prevent overriding and undue shortening. Angular deformity and rotation can be prevented by appropriate external support. The results which have attended this method have been exceedingly satisfactory.

The method of preparation of the bone ferrule was described and a number of the ferrules of different sizes exhibited. Three cases were reported in which the method had been employed. Case 1 was an ununited fracture of the femur; direct fixation of fragments; union with fragments in good position.

Case 2 was an ununited fracture of the humerus resulting from extensive loss of bone; paralysis of musculo spiral nerve; direct fixation of fragments by artificial impaction and bone ferrule, aided by catgut sutures; secondary nerve suture. Case 3 was one of compound comminuted fracture of leg; fixation of tibia with bone ferrule; penetrated plaster of Paris splint; suppuration; efforts at repair.

The speaker then detailed his experimental work with the bone ferrules.

Conclusions:—1. Direct fixation of the fragments is indicated in all compound fractures in which perfect retention can not be secured by simpler measures, and in the treatment of ununited fracture, requiring operative interference.

2. This method is also justifiable in the treatment of certain forms of subcutaneous fracture in which reduction and retention can not be accomplished without it.

3. Free exposure of the fragments in compound fractures secures the most favorable condition for thorough disinfection.

4. Perfect reduction and direct fixation of the fragments are the most reliable prophylactic measures against delayed and non-union and deformity.

5. A compound fracture should be regarded in the same light as an injury of soft tissues and should be treated upon the same principles, viz: accurate coaptation of the different anatomical structures and perfect retention by direct means of fixation aided by an efficient external support.

6. Bone suture, in tallis, bone and ivory nails do not furnish the necessary degree of support and immobilization in the direct treatment of fractures characterized by a strong tendency to displacement.

7. The solid intra-osseous splint of ivory or bone as advised by Heine, Langenbeck and Bircher is objectionable, because it interferes with the ideal production of the intermediate callous and its spontaneous removal is beyond the absorptive capacity of the tissues.

8. The hollow, perforated ivory or bone cylinder, devised by the author, answers the same mechanical purpose without the objections which have been charged against the solid cylinder.

9. The safest and most efficient means of direct fixation of oblique fractures is by a bone ferrule which must be applied in such a manner that it surrounds both fragments.

10. Such a circular absorbable direct splint prevents to perfection, lateral and longitudinal displacement.

11. Rotation of the limb below, and angularity at the seat of fracture must be prevented by a carefully applied circular plaster of Paris splint.

12. For fractures not requiring drainage, the entire wound should be closed by buried and superficial sutures, as the bone ferrule is removed by absorption.

13. In suppurating wounds the bone ferrule should not be removed until direct fixation has become superfluous by the formation of a sufficiently firm union between the fragments.

14. The external splint should be applied in such a manner that it does not require a change throughout the entire treatment permitting at the same time access to the wound should this become necessary.

15. Direct fixation of a fracture combined with perfect immobilization brings the different anatomic structures of the broken bone permanently into their former normal relations, preparing the way for the early initiation and speedy consummation of an ideal process of repair and the realization of a perfect functional result.

16. Should further experience demonstrate that bone is not sufficiently absorbable, the same kind of ferrule can be made of particularly decalcified bone or chromacized catgut.

Discussion of Dr. Senn's Paper.

Dr. Roswell Park of Buffalo, said that in discussing the paper he was under the disadvantage of not having seen the author's conclusions. He thought the method might be practiced with advantage where there is much displacement and difficulty in maintaining the fragments in position. In two or three cases he had used Volkmann's method for dovetailing the fragments together with advantage. In some cases he had used chromacized catgut or silkworm gut with good results. He had used ivory except in the form of small pegs. In suturing the fragments through holes drilled through the bone it is often difficult to bring the lower end of the suture around and tie it. It is easier to pass the suture around the bone by means of a modified aneurismal needle. It seemed to him that the application of the ferrule of Dr. Senn would require considerable disturbance of the soft parts and might give rise to local neurosis.

Dr. F. S. Dennis of New York, said that in the consideration of the management of compound fracture and ununited fracture we can eliminate entirely the question of sepsis. The surgeon can employ any of the methods suggested without the fear of septic complications. The method suggested by Dr. Senn is without doubt excellent in every way, but we can probably arrive at some simpler method of treating ununited fractures. He had been in the habit of resorting to drilling of the bone and always with success. In some cases small ivory pegs have been driven into the drill holes. Another method to which sufficient attention has been given is that of tenotomy. This at once relieves the muscular spasm and gives comfort to the patient. There is then no muscle to contract and disturb the fragments. If physiological rest is thus secured there is less liability to non-union. In simple fractures it is not a bad rule to divide the tendons at once.

There is no question in regard to the development of malignant disease in ununited fractures. The speaker had seen some fifty cases of sarcoma develop as the result of traumatism in bone and these have usually been cases where there has been some movement in the fragments. Epithelioma has also been seen in cases where there has been a sinus running down to loose bone.

The amount of disturbance of the parts seem to be an objection to the use of the ferrule, but this might be obviated by dividing the ferrule into two parts and securing them together after application.

Dr. D. Forrest Willard of Philadelphia, remarked that at the Presbyterian Hospital of Philadelphia, Dr. Allis and himself had been using methods of direct fixation where there is great tendency to displacement. In order to facilitate the application of sutures he had had made drills with an opening extending through the drill, and through this the suture could be readily passed. This saves much time He had seen a number of cases of Gluck's ivory insertions, but in every case with one exception the ivory plug had been discharged or was in process of discharge. The exception was a case where the ivory plug had been passed into a metacarpal bone.

The method of dovetailing referred to by Dr. Park is valuable. The fragments may be held together by the use of screws. Dr. Allis uses steel screws for this purpose which can be removed later if necessary.

(*To be continued.*)

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SATURDAY, JUNE 10, 1893.

THE FAR REACHING INFLUENCE OF ABNORMALITIES OF THE CLITORIS.

DR. R. T. MORRIS of New York, offers the following epigrammatic sentence regarding certain abnormal states of the clitoris: "The clitoris is a little electrical button, which when pressed by adhesions rings up the whole nervous system." He has found a large proportion of the highly evoluted females—Americans and city dwellers—of his practice, having the glans clitoridis and the prepuce agglutinated by adhesions. He has seen reflex neurotic disturbances of serious as well as trifling nature that were removed by the freeing of the glands from those adhesions. He had a case of nymphomania of eight years' standing get well promptly after the breaking up of these adhesions, also a very serious epileptic case; also others of less gravity.

He refers to the experience of the late BAKER BROWN of London, who was expelled from the London Obstetrical Society in 1867, because he amputated the clitoris so very frequently. The mistake of MR. BROWN, according to the view of DR. MORRIS, did not consist in magnifying the strong reflex influence of the clitoris over the nervous life of woman; but it consisted in cutting that organ away entirely, when all that was probably required, in many cases at least, was to liberate it from its imprisonment within the prepuce. If BROWN had pondered a little on the rôle that clitorideal adhesions play, he might have secured for his patients the same amount of benefit that he claimed to get from the operation of amputation, and at the same time retained his leading position among the British gynecologists. His energy carried him too far. The abnormal states of the clitoris may exist to a moderate extent without eliciting any reflex demonstration, but when they are extensive they are pretty sure to beget masturbation and attendant evils, from neurasthenic symptoms up to profound reflex neuroses. DR. MORRIS formulates the following among his conclusions: "Preputial adhesions form a very common factor in invalidism in young women." If this is a true conclusion the time has fully come when there should be female physicians organically attached to all the female colleges and schools.

INTERNATIONAL CONGRESS AT ROME NOT ADJOURNED.

DR. ABRAM JACOBI of New York City, has information from the Secretary of the Eleventh Congress that no postponement has been ordered. He has a letter as late as May 15, saying that the rumors, published from cablegrams purporting to come from Rome, are without foundation.

The Sanitary Section of the Congress will be chiefly if not exclusively devoted to the discussion of cholera and quarantine. DRS. KOCH and CUNNINGHAM of India are expected to take part in the work of that Section.

Those Americans who have been preparing to attend the Rome Congress need not cease those preparations until they hear of some *official* declaration to the effect that the meeting is off the card.

DR. JACOBI'S statement may be seen in the *New York Medical Journal* for June 3, 1893.

THE MAINTENANCE OF PRIVATE ASYLUMS A CONSTITUTIONAL RIGHT.

That the business of maintaining a private asylum for the treatment of mild forms of insanity, of inebriety and of persons afflicted with any mental or nervous disease, or who are suffering from the effects of the excessive use of alcoholic liquors, the supreme court of California declares, in the case of exparte Whitwell, just reported, is a lawful one, which can not be prohibited, either directly or indirectly. This decision is of all the more weight because the case was argued, both orally and in the briefs of counsel, with great learning and ability, and the court claims to have given to the questions involved the careful consideration which their importance demands.

The board of supervisors of San Mateo county, Cal., passed an ordinance March 16, 1892, to license, for purposes of regulation, the business of keeping asylums for the care of persons afflicted with insanity, inebriety, or other nervous diseases, which also provides that the board shall not grant a license to any person to conduct such business unless the walls of the asylum designated in his application are rendered fireproof by being constructed of brick and iron, or stone and iron, and the grounds accessible to patients are surrounded by a brick wall at least eighteen inches thick and twelve feet high, and the premises are distant more than 400 yards from any dwelling house or schoolhouse; and has a further provision that no license issued by the board shall

authorize male or female patients to be cared for in the same building. DR. WHITWELL was imprisoned for conducting an asylum comprehended in the ordinance, without securing a county license therefor. The case went up on a writ of habeas corpus.

The State may, of course, make proper laws for the care, government and safe-keeping of the unfortunate insane within its limits, says the court. This duty it owes, not only to those who are thus rendered incapable of taking care of themselves, but also to the community at large, the members of which are entitled to protection from the acts of persons not subject to the commands of reason. In the discharge of this duty the State has provided public asylums to which persons who are so far disordered in mind as to be dangerous to remain at large may, upon satisfactory proof of such condition of mind, be committed by the judge of a superior court; but it has made no provision at all for those of unsound mind who are not regarded as dangerous to themselves or the property or persons of others; and unfortunate persons belonging to this latter class are not to be denied the right to receive the patient attention, and often healing treatment, of a comfortable private asylum or hospital, if they or their kindred or friends are able and willing to incur the expense of such care and treatment. The business, therefore, of conducting a private asylum in which proper care can be given to such persons, by a member or member of the medical profession having experience and special skill in the treatment of such cases, is a necessary and humane one; and the right to maintain such an asylum or hospital, and to follow and practice this particular branch of the medical profession, cannot be prohibited or burdened with unreasonable and oppressive conditions.

In our opinion, continues the court, the ordinance under consideration imposes arbitrary and wholly unnecessary conditions upon the right to maintain such an asylum, an asylum in which only those afflicted with mild forms of insanity and the other diseases named in the ordinance are treated. While it is doubtless true that the board of supervisors of a county have the power, in the absence of any general legislation upon the subject, to prescribe by ordinance proper regulations for the protection of the patients in such an asylum from the danger which might result to them from the destruction of the asylum building by fire, still the requirement that such hospital or asylum shall be maintained only in a building constructed of either brick or iron, or iron and stone, without any reference to the size of such building, or the number of patients it is designed to accommodate therein, and without regard to other safeguards against fire with which it may be provided, is clearly unreasonable. It may be conceded that there would be less danger from fire in a building of the character required by the ordinance than in one differently constructed; but experience has not shown that the danger from fire in such a hospital is such an imminent peril, when reasonable care is taken to guard against it, as to justify a requirement that such hospital shall be conducted only in a building made from the materials named in the ordinance. Of course, in the management of a hospital where insane persons are treated, it is necessary to have, and it must be presumed that there will be,a sufficient number of competent attendants to prevent danger or damage from any unreasonable actions of such insane persons. Without such attendants no such asylum or hospital could be properly conducted. The fact, however, that a person is suffering from an insane delusion requiring treatment does not necessarily make him dangerous to himself or others, or render inactive in him the ordinary instincts which prompt self-preservation. On the contrary, as was said by MR. JUSTICE COOLEY, "many insane persons, even after they become hopelessly so, are to all appearance perfectly harmless, and for years continue to discharge the common duties of life in the most regular and acceptable manner, being trusted by every one in those particulars to which the insane delusion does not extend. The law takes notice of the fact that in many cases the disease leaves the person in the responsible possession and control of most of his faculties, and that the same motives influence his action in the employment of them that influence those not afflicted." It is the duty of the superintendent or attending physician of such an asylum to ascertain the nature of the delusion affecting any person received for treatment; and if there should be one admitted afflicted with pyromania, or whose actions would for any reason be difficult to control, it can not be assumed that such person would not be properly guarded, or that the hospital would not be managed with that degree of prudence which would render the patients therein reasonably safe from danger on account of fire. Legislation of this character which imposes an onerous burden of expense upon a lawful and highly meritorious business, can not be justified by the mere possibility of the danger which it ostensibly seeks to avert. It must rest upon the fact that experience has demonstrated that such danger, in the absence of such legislative regulation, is one which may reasonably be anticipated as the probable result of conducting such business, notwithstanding the exercise of ordinary care to prevent it.

The provision that no asylum in which persons suffering from any degree of insanity are treated shall be permitted within 400 yards of any dwelling or school can not be sustained as a lawful police regulation. A law or ordinance the effect of which is to deny to the owner of property the right to con-

duct thereon a lawful business, is invalid unless the business to which it relates is of such a noxious or offensive character that the health, safety or comfort of the surrounding community requires its exclusion from that particular locality; and an asylum for the treatment of mild forms of insanity is not properly classed as such. If rightly conducted, such asylum would not render the occupation of dwellings or schools in its neighborhood uncomfortable to such a degree that its maintenance would be deemed a nuisance, or any impairment of the substantial rights of occupants of such dwellings or schools. It is not like a private asylum for the confinement of dangerous lunatics, or a hospital for the treatment of loathsome or contagious diseases; and the reasons which make it necessary and proper to exclude from the thickly settled portions of cities and towns slaughter houses, soap factories and tanneries, with their offensive smells, magazines for the storage of powder and powder mills, with their attendant dangers, or any business or occupation which seriously interferes with the health or comfort of others if permitted in such localities, do not apply to a hospital whose inmates are harmless, although insane. It is possible that the maintenance of such an asylum would be to some people in its vicinity disagreeable and annoying in the sense that it would be more or less repulsive to them, but this is not enough to justify a regulation like that under consideration. There are many unpleasant, and even annoying things which must be borne by persons living in a state of organized society, in order that others may also enjoy their equal rights under the law.

This ordinance further denies to any one the right to conduct such an asylum unless the building or buildings used for that purpose, and the grounds to which the insane persons may be allowed access shall be surrounded by a brick or stone wall at least twelve feet high and eighteen inches thick. The erection of such a wall would be costly, rendering the buildings and surrounding grounds uninviting and unsightly to the eye, and would be a manifest injury to the unfortunate persons placed therein for care and treatment. This requirement of the ordinance can not be defended upon the ground that it is reasonably necessary for the protection of the public. Whatever justification there might be for such a provision if applied only to a private asylum in which dangerous lunatics are to be confined, it is, plainly unreasonable when applied to a hospital of the character maintained by the petitioner, where only persons suffering with mild forms of insanity and who are harmless are received. Such persons, if properly attended, do not require prison walls to restrain them, and it would be barbarous and inhuman to subject them to such treatment. The board of supervisors of a county, or the legislative department of any city or town in which such an asylum is erected, may undoubtedly provide by ordinance that patients therein shall not be permitted to leave the grounds upon which it is erected unless accompanied by an attendant, and may impose a penalty upon the superintendent or keeper of such asylum for a failure to conform to such regulation. Such an ordinance would be reasonable, affording all necessary protection to the public, without conflicting with the rights of any one.

The ordinance further provides that only one of the classes of persons therein mentioned shall be treated in the same building, and that a separate license shall be required for the treatment of each of the diseases named, and that male and female patients shall not be "cared for or treated in the same building." This provision is clearly invalid. The treatment of inebriates and insane persons, and of mental and nervous diseases not amounting to insanity, is a special branch of practice in the medical profession, and no reason exists why a physician desiring to maintain an asylum or hospital for the treatment of such cases should be required to erect separate buildings for the treatment of persons suffering from each of such diseases. Such a requirement is an unnecessary interference with the business of maintaining such an asylum, without any corresponding benefit to the public. If it be said that the welfare of the patients may demand this separation — that persons suffering from nervous prostration, for instance, should not be treated in the same building with the insane—the answer is that this is a matter which may be safely left to the judgment of the physician, whose business it is to treat such cases and whose education and experience, it must be presumed, qualify him to superintend such an asylum. The power to pass upon such a question has not been committed to boards of supervisors of the different counties, and such a regulation of the manner of conducting the business of maintaining such a private asylum is therefore unauthorized and void. In relation to that part of the ordinance requiring the separation of the sexes, it is sufficient to say that the admission of male and female patients to a private asylum or hospital conducted in one building is not immoral *per se*, nor can it be made so by any legislative declaration.

It is unnecessary to further discuss the provisions of this ordinance or to pass upon other objections which have been urged against it, concludes the court. Viewed separately, we think each provision discussed in this opinion invalid, and when the ordinance is considered as a whole, the invalidity of each provision becomes more plainly apparent.

ON BICYCLING FOR WOMEN.

DR. B. W. RICHARDSON speaks favorably, in the last issue of his *Asclepiad*, of the wheel as a means of exercise for women grown. For growing girls, or in fact for children of either sex, much cycling is not commendable. He holds that girls should not begin to ride regularly before they are seventeen years of age, and not then even, if they are not well built and strong.

But for women he believes the wheel has positive advantages. For example: "It insures a quick and sure cultivation of the senses, it leads to a good and healthful exercise of the muscles, it causes a fine expansion of breathing, it causes the lungs to inhale pure air, it quickens the circulation, and it brings to the mind a free and wholesome change of scene, which is a tonic of tonics to the depression incident to sedentary monotony." DR. RICHARDSON is very particular to have his disciples sit straight up on the seat or saddle, and to have the dress loose about the waist and chest,—this latter being of itself no slight gain to some of the tightly corseted members of the fair sex—and to take the exercise with a view to a pleasant outing rather than to a test of endurance.

The bicycle is preferred for women by DR. RICHARDSON over the tricycle, especially if the former be rigged with a seat rather than a saddle. The readiness with which the riders can mount and dismount, when using a wheel of that description, will become quite a drill in ease and gracefulness, especially if they learn to ride upright and keep their attention alert to the sights and events through which they move.

BOOK REVIEWS.

DISEASES OF THE RECTUM AND ANUS; THEIR PATHOLOGY, DIAGNOSIS AND TREATMENT. By CHAS. B. KELSEY, A.M., M.D., New York, Professor of Diseases of the Rectum at the New York Post-Graduate Medical School and Hospital; late Professor of Diseases of the Rectum at the University of Vermont, etc. Fourth Edition, revised and enlarged. With two chromo-lithographs and one hundred and sixty-two illustrations. Octavo, 496 pages, extra muslin, price $4.00. New York: William Wood & Company. 1893.

This work has been thoroughly revised and brought up to date and this process has evolved so many alterations and additions that the entire book has been reset and rearranged to a certain degree as can be seen by comparing this issue with that of the former editions.

There are eighteen chapters. The first chapter concerns the anatomy and physiology of the rectum and the anus. The second chapter embodies the general rules regarding examination, diagnosis and operation. In order to eliminate errors and to reach a correct diagnosis the author adopts and advises a routine method of anamnesis and examination. The only time our author failed to obtain permission to make an examination was in the case of a foreigner who had entirely too great a respect for the doctor to allow him to do such a thing, while the doctor had too much respect for himself to treat a patient without knowing what was the matter. In the chapter on hemorrhoids the following is said relative to Whitehead's operation: "The method seems, as I predicted when it was first made known, to have lasted a short time as a surgical curiosity, and now to be almost abandoned." He objects strongly to the performance of this operation for this reason, among many others, that the success depends entirely upon securing union of the adapted surfaces by first intention and failure in this means bad stricture of the rectum.

In the chapter on non-malignant ulceration we are somewhat chagrined at reading of tubercular ulcers and scrofulous ulcers; one being said to be due to the actual deposit and softening of tubercle, the other one being a simple ulceration without any actual local tuberculosis, modified in its course by the patient's general condition of malnutrition. There is some tendency to similar heterodox pathology visible in the consideration of rectal tuberculoses; and this subject is not treated with that thoroughness and detail that is grounded on a correct and vivid understanding of its pathology; exact diagnosis of this disease by means of microscopical diagnosis is not fully dwelt upon. In the chapter on non-malignant stricture of the rectum we fail to notice any reference to the recent work in which it has been shown that in the female, stricture of the rectum may develop from suppurative and other processes in the vulvo-vaginal glands from which the perirectal as well as the structures of the rectal wall are attacked by direct continuity of tissue.

The consideration of carcinoma of the rectum closes without any exact and definite rules and indications being formulated as to the employment of the numerous methods of operating now in vogue.

Throughout the book the number of illustrative cases recited at some length might seem unnecessary in many places. The index is rather brief and also incomplete; thus tuberculosis of the rectum can not be readily referred to because the only reference given is found under ulceration. The illustrations are many of them quite indifferent; thus Fig. 3 on page 304 labeled Esthiomene (Taylor) is certainly not satisfactorily reproduced; and Fig. 117, stricture due to plastic exudation, can certainly not be considered a success. On the whole, however, the publishers' work is fairly well done.

The book embodies a fairly full exposition of the treatment of the diseases of the rectum and the anus; it is also quite complete in the consideration of symptomatology; its principal weakness is shown in the parts devoted to the pathology and the morbid anatomy and to the diagnosis of rectal diseases. It is also quite apparent that condensation and a more definite and precise arrangement would make it more valuable, especially to the student.

INTERNATIONAL CLINICS; a Quarterly of Clinical Sections on Medicine, Neurology, Pediatrics, Surgery, Genito-Urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology and Dermatology, by Professors and Lecturers in the leading medical colleges of the United States, Great Britain and Canada. Edited by JOHN M. KEATING, M.D., LL.D., Colorado Springs, Col.; JUDSON DALAND, M.D., Philadelphia; J. MITCHELL BRUCE, M.D., F.R.C.P., London, Eng., and DAVID W. FINLAY, M.D., F.R.C.P., Aberdeen, Scotland. Vol. iv. Second series, 1893. Philadelphia: J. B. Lippincott Company. Pp. 400.

The last volume of this series has fifty-two contributors on ninety-three topics. New York is represented by twenty writers; Pennsylvania, eleven; Great Britain, eight and Illinois, four.

The book opens with a picture and sketch of Dr. Henry Ingersoll Bowditch, by Dr. Frederick I. Knight who was a student, and later on an associate of Dr. Bowditch. It is

full of characteristic reminiscences and authentic biographical data. Such useful lives as are portrayed here are a help and an inspiration to those who follow in their footsteps. The medical world is too indifferent toward keeping alive the memory of its great dead, while law and religion are filling the niches of fame with monuments to their leaders.

A thoroughly valuable article by Dr. Thos. J. Mayes on angina pectoris sets forth an intensely interesting reposition of the subject, both as to the etiology and the treatment. The theory of the increased alkalinity of the blood and the consequent uric acid irritation of the nerve supply of the heart is ably and logically supported. His résumé of the therapeutics of the disease is very complete and satisfactory, but in the last three lines on page 29 he accidentally reverses the meaning of the author he has just quoted.

In a paper on fatal cases of intestinal obstruction in which there were simple dilation and hypertrophy of the large intestine, Dr. W. B. Hadden cites three cases and their autopsies. Two were operated upon. Opium was given to one, oil enemata to all, and a catheter was passed into the rectum of one, an infant. Large injections of glycerine and water were not tried or suggested. Enormous distensions and hypertrophy of the bowels were found. Kneading or massage of the lower part of the abdomen is advised, with large doses of oil, and copious enemata by the long tube. Drastic purgatives are avoided. Other means failing, the distended sigmoid flexure must be exposed by an invasion in the middle line below the umbilicus, to rectify any misplacement and to force the fæces through the anus, or failing in this, to make an artificial anus.

Dr. H. H. Mudd presented in his clinic two cases of appendicitis cured by operations. He says: "It is true many cases recover without operative measures, the necessary treatment being rest in bed, attention to the bowels, and moderate diet—the abscess, if there be one, opening into the bowel and discharging through the intestine. Induration and thickening about the head of the colon do not necessarily imply suppuration, for not infrequently the inflammation subsides without the formation of an abscess. It must be admitted, even by the most conservative, that operative interference in these cases is very generally judicious, conservative and efficient."

Dr. Wm. H. Porter goes elaborately into the dietetic as well as the medicinal management of rheumatism after a most scientific discussion of the etiology and pathology of the disease. He follows along Clark's method of medication. He does not accept the theory of the bacterial origin of rheumatism, but regards it as resulting from false feeding and a faulty digestion and assimilation. He calls attention to the fact that unless free mercurial catharsis precedes the exhibition of the salicylic compounds they often appear to be absolutely worthless.

Dr. W. W. Keen gives his views on the necessity of an early operation in acute appendicitis and describes his operative treatment. Instead of following Willard Parker's rule of waiting to operate between the eighth and twelfth days when 68 per cent. of the patients would die, he follows Fitz in operating on the second or third day.

Dr. G. M. Hammond has an instructive talk on facial paralysis with illustrations of two cases. He makes clear the differential diagnosis between the various forms, due to the different situations of the lesions.

Dr. Balzer of Paris says: "Any of the antiseptics may succeed in the treatment of chancroid. The rapid and complete destruction of the ulceration by caustics, antisepsis, rest and treatment by tonics is the sum total of the treatment of soft chancre."

Dr. G. M. Lefferts prefers nitric acid on a cotton holder for cauterizing hypertrophies of the turbinates. He declares that "the treatment of atrophic rhinitis is a hopeless one."

No one who reads these volumes can help being a better physician for it. Some of the lectures are replete with the most carefully prepared and most recent information. The best work seems to have been done in the departments of general medicine and surgery. The specialists seem to have written their articles in a rather perfunctory manner.

NECROLOGY.

Dr. Charles H. Pinney of Derby, Conn., died of anæmia at Evanston, Ill., May 16, 1893. He was born at New Windsor, Conn., April 25, 1831. He began the study of medicine when seventeen years of age. He spent three years at Harvard College, and graduated from the College of Physicians and Surgeons, New York, in 1853. He was for some time a private student of Willard Parker and Robert Watts. Thirty-nine years ago last month he married Miss Mariah Watson, a niece of his first preceptor.

Dr. Pinney was an early member of the American Medical Association, and he has taken much interest in the work of other societies. He had an extensive practice and was much respected in his profession, but he was much more than a prescriber of physic. He was a member of that class of doctors who are respected as men, beloved as friends, and honored as leaders in the elevation of social standards. With his wife, who entered heartily into his studies, he made many trips to Europe, and there became a connoisseur in art. His private art collection is a valuable one.

On the 11th of last September his buggy was run down by an electric street car. He was dragged some distance and severely injured. He has since that time had several intestinal hemorrhages. That he might have a much needed rest, and at the same time visit the World's Fair and attend the meeting of the American Medical Association, he left home with his wife. On their way west he was again weakened by loss of blood. They reached the home of a relative in Evanston where he rapidly sank to rest.

His remains were taken to their late home. Besides his widow he leaves an only son, Dr. Royal Watson Pinney, who for the past three years has been associated with his father in practice.

Dr. William Lee, formerly for many years the librarian of the American Medical Association, died at Washington D. C., March 2. He was born in Boston, Mass., March 12 1841, a descendant in the seventh generation of John Lee of Agawam. In 1861 he served a short time as medical cadet, and the year following as an assistant in the Hospital for the Insane at Washington. In 1863 he obtained his medical degree at the College of Physicians and Surgeons, after which he became a Bellevue interne, enjoying a memorable service at the Charity Hospital during the stirring times of the "draft riots," and taking the service at the Retreat for small-pox long enough to become himself the victim of a varioloid attack. At Bellevue Hospital he did his full share of duty in caring for his colleagues who were down with the typhus fever in a continuous series for several months. In 1865 he made his permanent home in Washington, and in that same year became a lecturer on microscopic anatomy in the medical department of Columbian University. Later he became the professor of physiology. He was one of the editors, for one year, of the *National Medical Journal*, and a member of the local board of health. He was a physician to the Columbian Dispensary for a number of years. He was a member of the Clinical and Pathologi-

cal and District Medical Societies, being last year the president of the last named body. In life he had expressed to his wife and friends a desire that his body should be cremated, when the end should come. His wish was complied with and at a crematory in Baltimore the mortal part of this sterling and amiable gentleman and physician was transformed into ashes. Exceptionally favored by nature with an attractive personal appearance, he added to it a gracious yet grave address; he was first admired as a stranger; then as an acquaintance and friend steadfastly adhered to as with hooks of steel. The natural bent of his mind was conservative, yet few men have been more anxious to do full justice to the true improvements of his art, as they have come along year by year since the date of his settlement in professional practice, nearly thirty years ago. Of his performance of duty as an officer of the Association, only words of praise can be said by his associates.

SELECTIONS.

THE RELATION OF PELVIC DISEASE TO PSYCHICAL DISTURBANCE IN WOMEN.—George H. Rohé reported to the recent meeting of the American Association of Obstetricians and Gynecologists the results of his examination and treatment of pelvic diseases among insane women in the Maryland Hospital for the Insane. Upon the supposition that mental disorders, while not necessarily dependent upon the existence of previous pelvic disease, may be aggravated by such a condition, thirty-five women were subjected to a vaginal examination, and of this number twenty-six were found to be suffering from some form of pelvic disease or abnormality. In some cases that were not examined nor suspected of having disease of the genitals, an autopsy revealed such lesions. Eighteen cases were selected for operation, and the majority of these had the appendages removed. Sixteen of these cases recovered from the operation; three of them have been discharged from the hospital apparently well both physically and mentally. In ten, considerable improvement followed the operation in both physical and mental conditions, and in three the operation was of too recent date for the expression of any conclusion.

Apropos to the above report may be mentioned the fact that similar treatment has been extended to some of the inmates of the Norristown Asylum (*Medical and Surgical Reporter*, December 31, 1892), and among thirty patients examined by Dr. Maria B. Werner, the great majority had positive and easily recognizable disease of the pelvis, some cases requiring prompt operative measures. While the mental condition of some patients has not been at all improved by the cure of pelvic disease, on the other hand some insane women have been restored to their normal mental condition, and whatever may be said pro or con about this procedure, the results seem to show the truthfulness of Dr. Rohé's concluding remark, that we are required "in the name of science and humanity to give to an insane woman the same chance of relief from disease of the ovaries and uterus that a sane woman has."—*University Medical Magazine.*

TUBERCLE BACILLI IN LYMPHATIC GLANDS.—Pizzini reports a series of experiments which show that virulent tubercle bacilli may exist in lymphatic glands of persons showing no other tubercular lesions. These glands, taken from persons who had died from different diseases, were inoculated into guinea-pigs, and it was found that in forty-two per cent. tubercle bacilli were present in the glands. The author believes that tubercle bacilli may readily pass through the epithelial lining of the air-passages, reach the lymphatic glands and there remain quiescent, preserving, however, their virulence and in condition at any time to infect other tissues. The bronchial glands were by far the most commonly affected. In no case did he find any bacilli in the mesenteric glands.—*Boston Medical and Surgical Journal.*

MISCELLANY.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.—Seventh annual meeting will be held at the Four Seasons Hotel, Harrogate, Tenn., Tuesday and Wednesday, June 20 and 21, 1893.

NEW HAMPSHIRE MEDICAL SOCIETY.—One Hundred and Second Anniversary Meeting, Monday and Tuesday June 19 and 20, 1893, at Concord.

PAN-AMERICAN MEDICAL CONGRESS—SECTION ON GENERAL SURGERY.—The Section on General Surgery extends a cordial invitation to all medical gentlemen engaged in the practice of Surgery; as teachers or practitioners in any of its branches, to participate in all its meetings, and contribute papers for the general information.

Such papers should conform to the requirements, as set forth in the general regulations of the Congress.

In view of the wide extent of the constituency of the Congress and the varied human environment necessarily under observation, it is suggested that the topic of endemic or surgical diseases prevalent in each country might fittingly receive a large share of attention from the members of this Section; but carefully written papers upon *any* topic connected with surgical bacteriology, surgical pathology, or operative surgery of the regions will be welcomed by the Section. JOHN B. HAMILTON, *Executive President.*

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 27, 1893, to June 2, 1893.

First Lieut. William F. Lewis, Asst. Surgeon (recently appointed), will proceed from Kinston, N. C., and report in person to the commanding officer, Ft. Assiniboine, Mont., for duty at that station.

Capt. Curtis E. Price, Asst. Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability.

Major John Brooke, Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and will repair to Philadelphia, Pa., and enter upon temporary duty as attending surgeon and examiner of recruits in that city.

Capt. William C. Shannon, Asst. Surgeon, now in this city, is relieved from further duty at Ft. Apache, Ariz., and will report in person to the Surgeon-General for duty in his office, vice Capt. Harry O. Perley, Asst. Surgeon, who at his own request is relieved from duty in that office, and will report in person to the commanding officer, Plattsburgh Bks., N. Y., for duty at that station.

Capt. William C. Shannon, Asst. Surgeon, is relieved from further duty under the intercontinental railway commission, appointed under the provisions of the act of Congress appoved July 14, 1890. By direction of the president.

Lieut.-Col. William D. Wolverton, Deputy Surgeon-General U. S. A., is granted leave of absence for one month.

Capt. Richard W. Jobson, Asst. Surgeon, is granted leave of absence for fifteen days, to take effect upon his relief from duty at Ft. Bowie, A. T.

Major D. G. Caldwell, Surgeon U. S. A., is hereby granted leave of absence for twenty-five days, to take effect on or about June 5, 1893.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending June 3, 1893.

Medical Director F. L. DuBois, from the "Philadelphia," and to the "Chicago."

P. A. Surgeon T. C. Craig, from the "Boston," return home and three months' leave.

P. A. Surgeon E. S. Bogert, from the "Philadelphia," and to the "Boston."

P. A. Surgeon E. R. Still, from Norfolk Hospital, and to the "Chicago."

P. A. Surgeon J. F. Uric, from the "Chicago," and waiting orders.

Asst. Surgeon M. S. Guest, from the "Franklin," and to the "Philadelphia."

P. A. Surgeon F. W. F. Wieber, ordered to Naval Hospital, Norfolk, Va.

Asst. Surgeon L. W. Spratling, from the "St. Louis," and to New York Hospital.